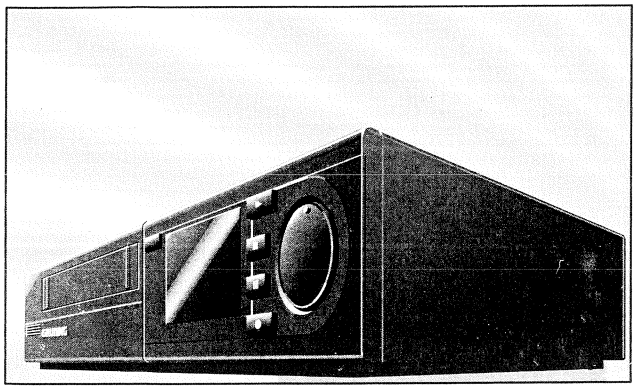
GRUNDIG VS-910

MODEL

OWNE'S MANUAL

What You Should Know about Your Video Recorder



This recorder employs the VHS system

The recordings made on this video recorder can be played back on any recorder operating with the same system.

The dialogue remote control handset...

...is the central control unit for this video recorder.

From the comfort of your armchair, you can remotely control nearly all functions of the recorder.

GRUNDIG On-Screen-Dialogue – what is that?

The innovative »intelligence« and versatility of this system make it possible to display the required steps for making settings and data entries – normally considered to be very complicated – in a simple and comprehensible way on the picture screen.
Nearly all settings and operating steps are selected with the remote control handset and then acknowledged on the picture screen of the TV set by a logical user guide, i.e., on the picture screen always the correct tables and dialogue lines showing you the next and possible operating step will appear.
As a further help, the symbols of the required buttons of the remote control handset are also shown.

In this way, you will be guided systematically and step by step until you have achieved the desired result.

GRUNDIG-Toptext-Programming, with VPT

Programming with the remote control handset, checking on the TV set...
...i.e., calling up certain Teletext pages, then selecting the desired data directly in the programme summaries offered by the TV stations, and finally confirming the data with the remote control handset. The selected information then is shown on the picture screen of your TV set.
Information lines will guide you to the next programming step and the resulting entry possibilities.
The dialogue with Toptext-Programming is possible in several languages.

The GRUNDIG-Archive-System

The GRUNDIG-Archive-System is an electronic notebook.

With the basic version of this system, you can store up to 700 titles along with a lot of information. If desired, it is possible to extend the Archive-System to up to 1400 titles.
The advantages of the GRUNDIG-Archive-System are:
You have your title list always to hand, as all required information is stored in memory.

When making programmed recordings, the titles of the recorded broadcasts along with the associated information are »automatically« transferred into the Archive-System. Precondition for this is that the TV stations from which you are recording the broadcasts are operating with Teletext.

When starting a recording by hand, the data is automatically transferred into the Archive-System. All you must do is to enter the titles afterwards.

You can enter into the Archiv-System any recording made previously.

You can enquire the titles, key-words, and subjects of the archive in a few instants, load the cassette containing the found title, and start playback of the title by simply pressing a button.

A summary of the remaining playing times of all cassettes in the archive allows you to quickly find out a cassette with sufficient space for a new recording.

Jog and Shuttle for creative playback arrangement in a few instants

With the »Jog« wheel and the »Shuttle« ring on the front of your recorder, you can determine the playback speed and direction.

The Jog and Shuttle functions permit to »page« recordings at high speed, to search certain passages at half playback speed, to »freeze« a picture for thorough examination, and to switch the freeze-frames step by step – all of this in a few instants.

Of course, you can select the Jog and Shuttle functions also with the remote control handset.

Recording and playing back in hifi quality

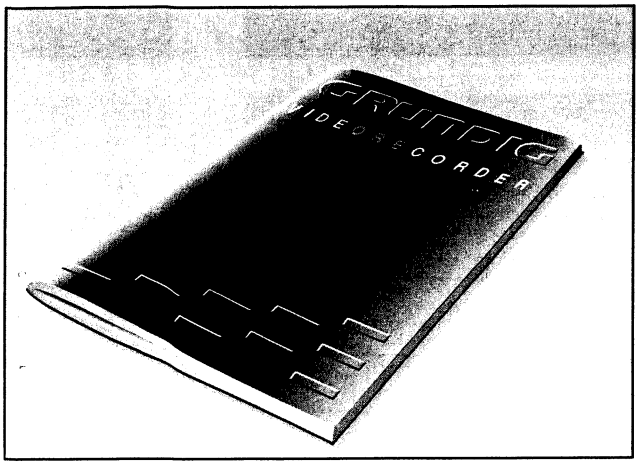
Your recorder records the sound signal not only on the mono (longitudinal) track, but also on a hifi (helical) track.
With this outstanding feature, you can use your recorder also as hifi tape recorder for recording and playing back in top quality.

Integrated audiomixer

With your recorder, you can record sound information from the microphone and audio inputs on the longitudinal and the helical tracks at a later date (Dubbing) – either separately or mixed as desired.

In the mix mode, it is possible to reproduce the sound signals from the hifi helical track and the normal (longitudinal) track together.

Important Information



Important information for using these operating instuctions

Dear customer,

so that you can use the versatile comfort functions of this video recorder safely and without problems, these operating instructions are divided into clear and logically to learn operating steps.
Throughout these operating instructions, the headlines in the list of contents and in the text itself are marked by the same colours.
These colour marks will guide you like a main connecting thread to the desired operating steps.

Let you guide:

The headlines marked light-blue will guide you to the chapters
Preparations
You or your specialized dealer must perform these "preparatory" works and settings so that you can use
all functions of your video recorder.

Playback, Starting Recording Immediately, Record Programming

The headlines marked dark-blue will guide you to the chapters
Safety Considerations
which you should read in any case before attempting to use your video recorder,
and to the basic functions of the chapters
Playback,
Starting Recording Immediately
Record Programming.
For quick and simple use of the basic functions, the information contained in these chapters will suffice.

Archive System
Special Functions

The headlines marked dark-grey will guide you to the complementary functions of the chapters Playback, Starting Recording Immediately, and Record Programming, as well as to the chapters
Archive System
Special Functions.
These chapters will inform you in a detailed way about the further features of your recorder.

Valuable Information
Specifications

The headlines marked in light grey will guide you to the chapters
Valuable Information
Specification.
These chapters contain further interesting information about the video recorder.

An now have a good time when becomming acquainted with your new video recorder!

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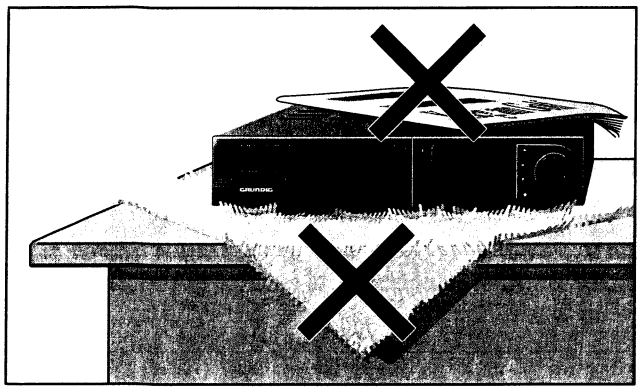
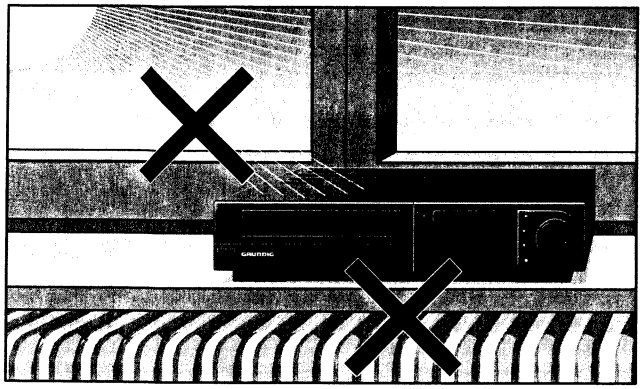
1. Safety Considerations

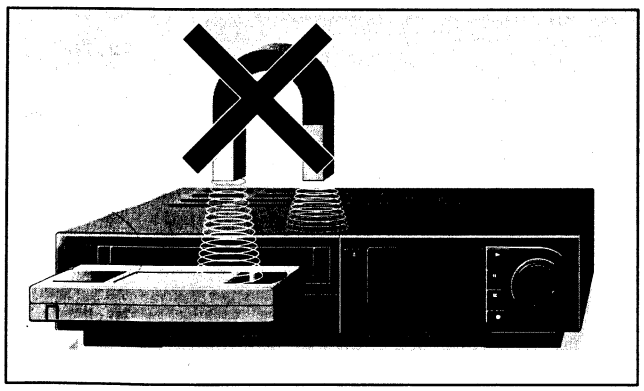


Place the recorder on a flat and hard surface.

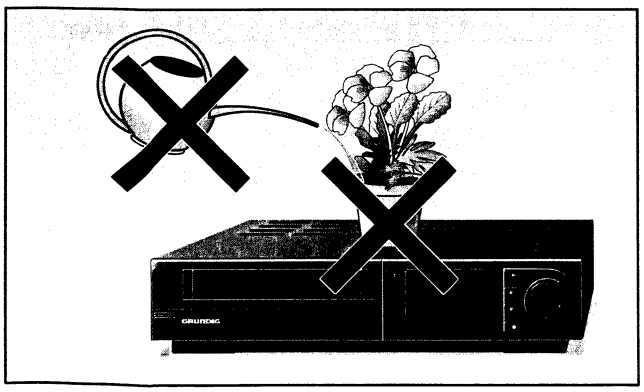
Do not place the recorder on a mat or something similar and do not lay any objects (e.g., newspapers) onto the recorder, as this would obstruct the ventilation slots required for cooling.



Do not place the recorder in the immediate vicinity of a heat source or in direct sunlight, as this would also prevent appropriate cooling.

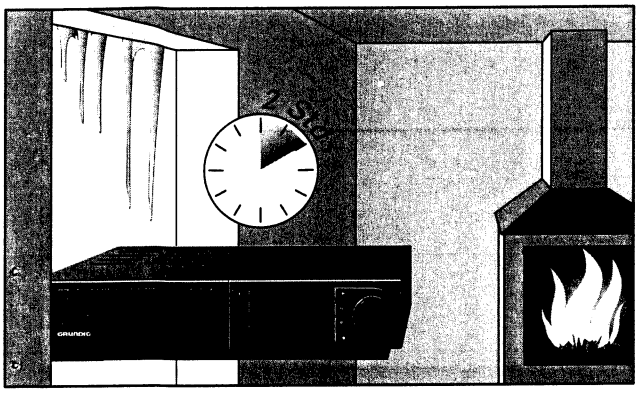


Keep the recorder away from magnetic fields (e.g., louspeakers).

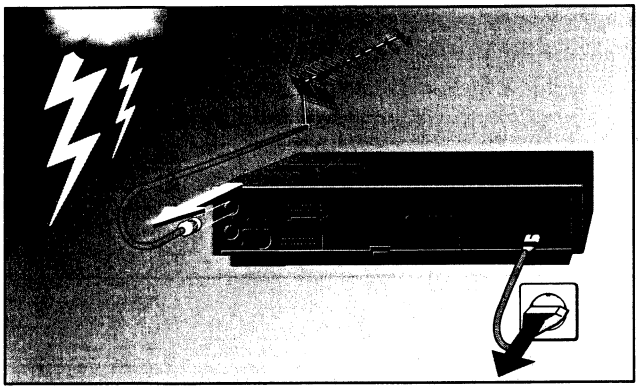


Do not expose the recorder and the cassettes to any moisture. The recorder is intended for use in dry rooms.
If you wish to operate it in the open air nevertheless, make absolutely sure that it is protected against moisture (rain, splashes of water).
Do not place any vessels filled with water (vases or something like that) onto the recorder. The vessel might fall over and the liquid penetrating in this case into the unit might endanger its electric safety.

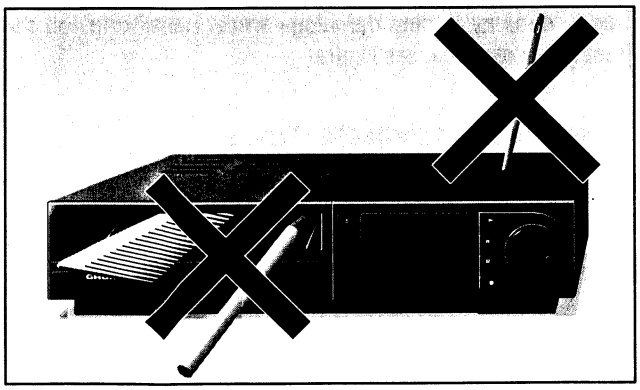
1. Safety Considerations



Do not expose the recorder to sharp temperature changes, e.g., when taking it from a warm to a cold place.
If this should happen, switch on the recorder and let it stand at the new place for at least two hours without a cassette loaded.



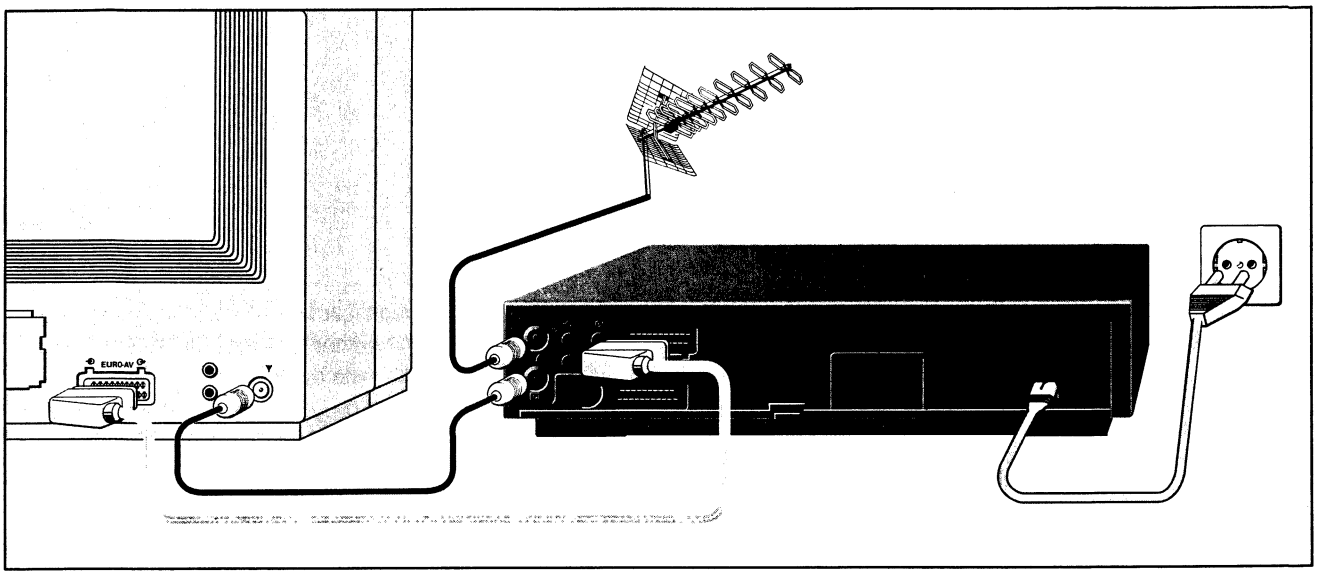
Thunderstorms are a danger for each electrical appliance. Even when switched off, the recorder might be damaged by a lightning striking the mains and/or aerial lead.
During a thunderstorm or longer pauses of operation (e.g., during holidays), you should therefore always disconnect the mains and aerial plugs.



Never put foreign matters into the cassette compartment or the ventilation slots of the recorder, as this might damage high-value mechanical parts.

2. Preparations

Connecting the Video Reocrder



Connecting the recorder to the aerial

Remove the plug of the aerial cable from the aerial socket of your TV receiver and insert it into the aerial socket Y of the recorder.

Connecting the recorder and the TV receiver

Connect the socket ▭ of the recorder with the aerial socket of the TV receiver using the aerial cable supplied with the recorder.

If your TV receier is provided with an EURO-AV socket, then connect in addition this socket via an Euro-AV connecting cable with the output socket ⊖ EURO-AV ⊖ of the recorder.
You can buy an Euro-AV cable in the specialized trade.

The advantage of this connection is a still better picture and sound quality during playback.

Connecting the recorder to the mains

Insert the plug of the mains cable into the wall socket.

The mains cable must only be replaced by an original part by a specialist according to the VDE/IEC guidelines.

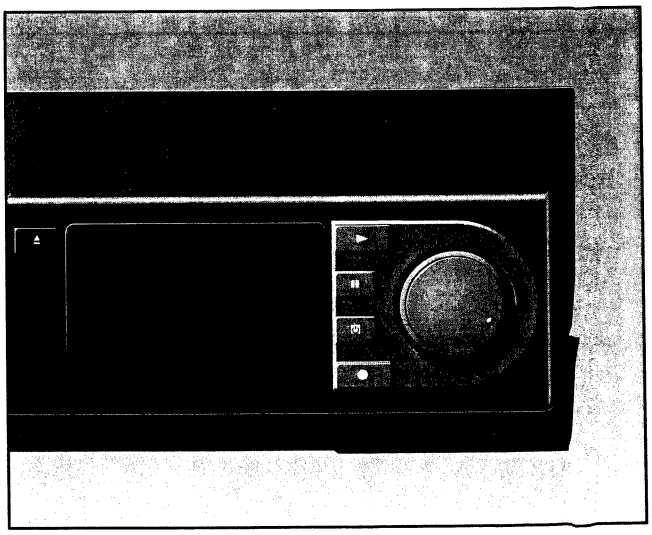
Switching on the recorder

This is done by turning the »Jog« wheel (inner ring) on the front of the recorder, see Figure.

Switching the recorder to standby

This is done by pressing the button ⏻.

Only by pulling the mains plug the recorder will completely be isolated from the mains.



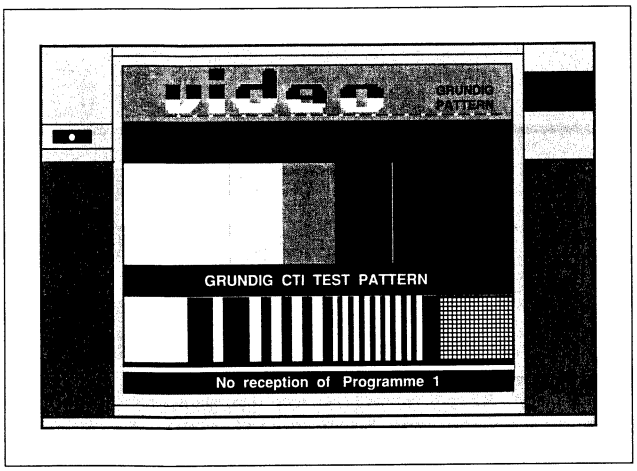
Tuning the TV Set to the Recorder

Your TV set receives the programmes broadcasted by various TV stations on certain channels. Your recorder is also transmitting on such a channel (betwen the channels 30 and 40 ± 2 channels in the UHF band) to which the TV set now must be tuned.
For this, the recorder is provided with a "transmitter" which can transmit a colour test pattern.

Switch on the TV set and select the AV programme position intended for the playback of video recordings via the aerial cable.

Remove the aerial cable from the socket Y of the recorder.

Switch on the recorder by turning the »Jog« wheel on the front of the recorder to the right.
After a short time, the recorder will transmit a colour test pattern.



Search the colour test pattern on the TV set in the UHF band between the channels 30 and 40 ± 2 channels and store it in memory.
How to do that can be found in the operating instructions of the TV set.

Re-plug the aerial cable into the aerial socket Y of the recorder.

If the picture quality is good,
complete tuning with the button ⏻ on the recorder.

If »moiré pattering« or wavy lines are visible on the TV picture, the channel tuned to is already occupied by a TV station.

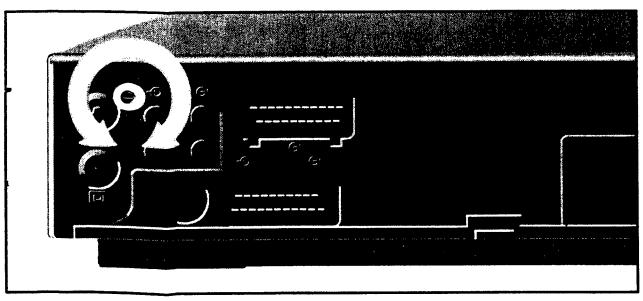
In this case, proceed as follows:

Press the button ⏻ on the recorder.

Search a channel in the UHF band between the channels 30 and 40 ± 2 channels on the TV set which is not occupied by a TV station (only noise on the picture screen).

Store the found channel in the memory of the TV set (see operating instructions of the TV set).

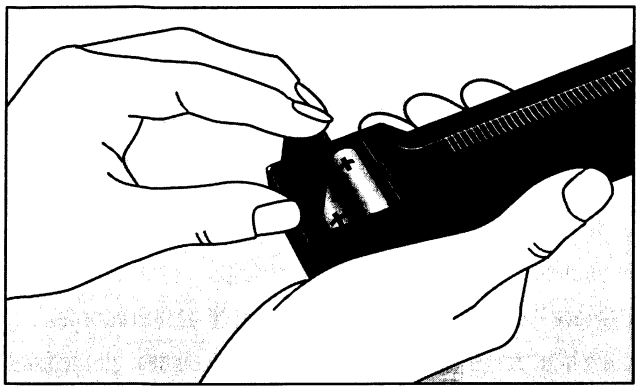
Remove the aerial cable from the socket Y of the recorder.
Switch on the recorder by turning the »Jog« wheel on its front to the right.
After a short time, the recorder will transmit a colour test pattern.



Turn the channel selector ⌀ on the back of the recorder (see Figure) slightly to the left or right until the colour test pattern appears on the TV picture screen.

Re-plug the aerial cable into the socket Y of the recorder and complete the adjustment by pressing the button ⏻.

Inserting Batteries into the Remote Control Handset



Press on the catch and remove the cover from the battery compartment.

Insert the batteries (2x1,5V, type LR 6 (GB:HP 7) observing correct polarity (marked on the bottom of the compartment).

If your recorder no longer correctly responds to the remote control commands, the batteries may be exhausted.

Change exhausted batteries immediately.
No responsibility will be taken for damage caused by leaking batteries.

Exhausted batteries must be handed over to a special refuse collecting point (environmental protection).

Switching On and Off the Transmitter of the Recorder

If your recorder receives many TV stations in the UHF band on the channels 30 to 40, picture interferences may occur during operation of the recorder. To avoid this, you can switch off the transmitter of the recorder.

So that the picture/sound of your recorder can reach your TV set, these two units must be connected via an EURO-AV cable (see page 8).

Switching off the transmitter of the recorder

Press one after the other the numbered buttons [8] [5] [1] [8] on the remote control handset and then the button [OK].
The transmitter of the recorder is switched off.

Switching on the transmitter of the recorder

Press one after the other the numbered buttons [8] [5] [1] [9] on the remote control handset and then the button [OK].
The transmitter of the recorder is switched on.

The GRUNDIG On-Screen Dialogue...

...enables a dialogue between you and the recorder.

Many functions which you select with the remote control handset the recorder answers by info tables and dialogue lines.

In the bottom part of the info pages you will find symbols of the remote control buttons and dialogue lines required for the next and possible operating steps.

Each pressure on a button of the remote control handset will be acknowledged by the symbol ◻ in the display.
You will be guided step by step in a simple and comprehensible way.

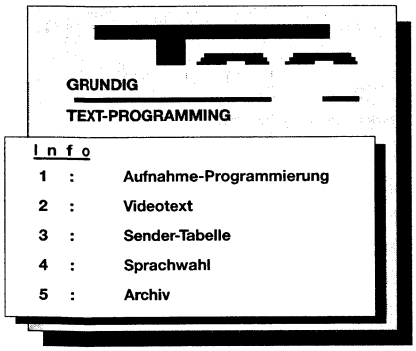
Preparations

Switch on the TV set.

Select the programme position for video playback (= AV programme position) on the TV set.

Calling up the Info page

Press button [i] to call up the »Info« page.
The »Info« page appears on the screen of the TV set and shows you which functions you can select.



INFO in the display of the recorder signals the readiness for the on-screen dialogue.

You now can select the available functions (options) with the numbered buttons [1] to [5].
For the further operating steps, refer to the respective chapters of these operating instructions.

Enlarging displayed pages

Repeatedly pressing the button [⊞] causes:

double character size in the upper half of the page;

double character size in the bottom half of the page;

normal character size on the whole page.

Switching off the Info page

For this, press the button [i]. You will see the current TV picture.

Selecting a Language

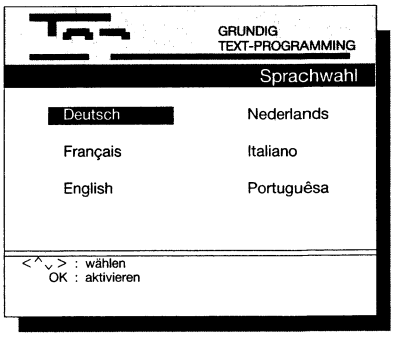
You can select between several languages for the dialogue with the recorder.
The German language is preset.
If you wish the dialogue in another language, then proceed as follows:

Switch on the TV set.

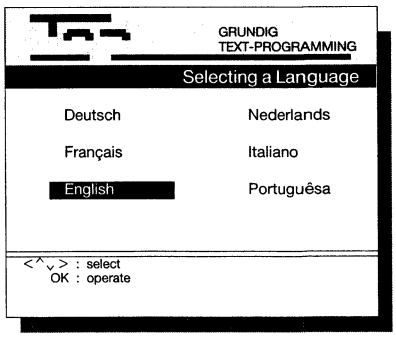
Select the programme position for video playback on the TV set.

Call up the »Info« page with button [i].

Select the line »Sprachwahl« (Select Language) in the »Info« page by pressing the numbered button [4].
The page »Sprachwahl« appears.



Select the desired language with the buttons [▲], [▼], [◀] or [▶].
The selected language will be highlighted on blue background.



Activate the selected language with button [OK].
The recorder switches back to the »Info« page. From now on, all info pages and dialogue lines will appear in the selected language.

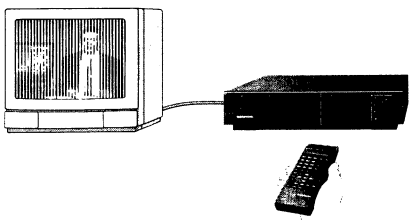
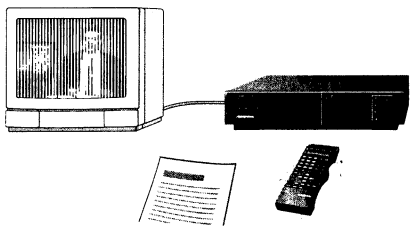
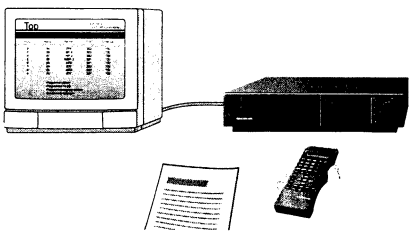
Press button [i] to return to the television picture.

Tuning the Recorder to TV Stations

So that the recorder can record television broadcasts, it must be tuned to the channels of the local TV stations and/or to the special channels of the regional cable television systems.

Up to 49 programme positions can be allocated to the channel numbers of TV stations.

There are tree possible methods to do this. For the differences between these methods, please refer to the following table.

The variants	on the pages	What you require	To use if...	Restrictions
1 With the remote control handset and the channel search.	13		... you do not know the channel numbers of the TV programmes.	The station abbreviation and numbers of the Teletext pages (essential for record programming and automatic storing of titles into the archive) must be entered according to variant 3.
2 With the remote control handset and by entering the channel number.	14		... you know the channel numbers of the TV programmes and no further entries (numbers of the Teletext pages and stations abbreviations) are required.	
3 With the remote handset and the »on-screen dialogue«	15 to 18		... you know the channel numbers and wish to enter the station abbreviations and Teletext page numbers. This is essential for record programming and automatic storing titles into the archive.	none

Variant 1
Tuning to TV stations with the remote control handset and the channel search

Your recorder searches the channel/special channel numbers of the television programmes.
The channel search starts with channel 1 (indication 1C) and ends with channel 80 (indication 80C).
Following this, it searches the special channels from S 1 (indication 1CA) to S 41 (indication 41CA). The special channels S 21 to S 41 are not yet allocated to TV programmes.

Preparations

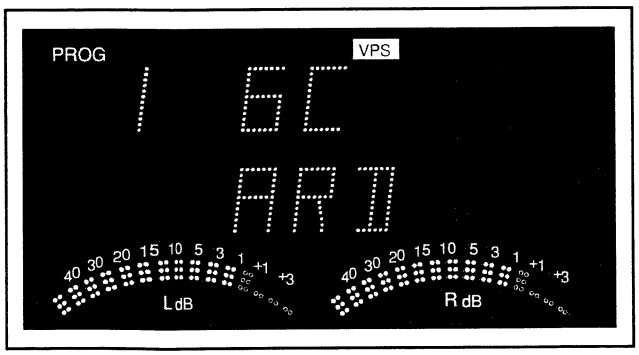
Switch on the TV set.

Select the programme position for video playback on the TV set.
Your TV set serves as control monitor.

Searching TV programmes (channels)

Activate the channel search mode by pressing button ▲ and then button C.

Start the automatic channel search by pressing button ↔.
If the indication VPS appears on the recorder, this is receiving this additional signal and in its display appears automatically the station abbreviation (e.g., ARD) of the received programme.



If a TV programme with a different colour norm (SECAM broadcasts) is found, then press the button C.
»SEC« appears in addition below the channel number.

Fine tuning

If corrections of the picture quality should be necessary (e.g., poor picture quality, or the VPS indication flickers or goes out), then proceed as follows:

Press button ◄ to make the picture contours softer.

Press button ► to make the picture contours harder.

Storing the settings in memory

Use the button ▼ or ▲ to select the programme position on which you wish to store the channel number of the found programme.

Then press button OK to store your choice in memory.
The selected programme position is now allocated to the found television programme (channel).

For adjusting further programmes, again press the button ↔ and repeat the steps described above.

Terminating adjusting TV programmes

Press button ⏻.

If you wish to enter station abbreviations and numbers of Teletext pages, then continue the adjustment according to variant 3, pages 15 to 18.

Variant 2
Tuning to TV stations with the remote control handset and by entering the channel numbers.

Preparations

Switch on the TV set.

Select the programme position for video playback on the TV set.
The TV set serves as control monitor.

Adjusting TV programmes

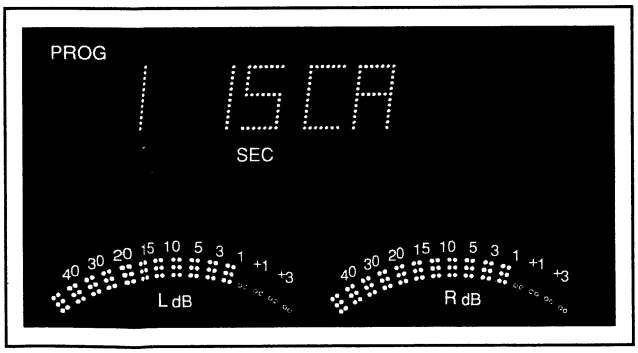
Press the numbered button [1] and then the button [▲]. Programme position 1 is thus selected.
Repeatedly press button [C] until the required indication appears on the recorder:

C = television programmes (PAL colour broadcasts)
C SEC = television programmes (SECAM colour broadcasts)
CA = cable television programmes (PAL colour broadcasts)
CA SEC = cable television programmes (SECAM colour broadcasts)

A station abbreviation may be shown in the display (e.g., ARD), however, this is without meaning.

Enter the channel number of the desired TV programme as two figures with the numbered buttons [1], [2] to [9], [0].

In the display of the recorder apperars:



(Example for a cable TV programme with SECAM colour norm).

If the indication VPS appears on the recorder, this is receiving this additional signal and in its display appears automatically the station abbreviation (e.g., ARD) of the received programme.

Fine tuning

If corrections of the picture quality should be necessary (e.g., poor picture quality, or the VPS indication flickers or goes out), then proceed as follows:

Press button [◄] to make the picture contours softer.

Press button [►] to make the picture contours harder.

Storing the setttings in memory

Press button [OK].
The programme position is allocated to the entered programme (channel).

Press button [▼] or [▲] to select the next desired programme position and repeat the steps described above.

Terminating adjusting TV programmes

Press button [⏻].

If you wish to enter station abbreviations and numbers of Teletext pages, then continue the adjustment according to variant 3, pages 15 to 18.

Variant 3
Tuning to TV stations with the remote control handset and the on-screen dialogue

Note on record programming with the Teletext pages of the TV stations

In the record programming mode with the help of Text programming, you no longer need TV programme magazines for the required data, but you can find the data in the programme summaries offered by certain TV stations on Teletext pages.

The numbers of the Teletext pages on which these programme summaries can be found may differ from station to station.

In the case of German TV stations (e.g., ARD, ZDF, 3rd Programmes and SAT 1), you will normally find this programme summary on the Teletext page 300.

The following example shows the ARD programme summary.

- Complete programme offer on page 300.
- "Heute vormittag" on page 301.
- "Heute nachmittag" on page 302.
- "Heute abend" on page 303.
- Week-summary on page 360.
- ARD late afternoon programmes from page 380 on.

No you can decide, with which programmes and from which programme summaries you wish to programme most of your recordings.
Enter the channel numbers of these TV stations and the required numbers for the Teletext pages into the »TV Stations Table«.
For this, the programme positions 1 to 29 are provided.

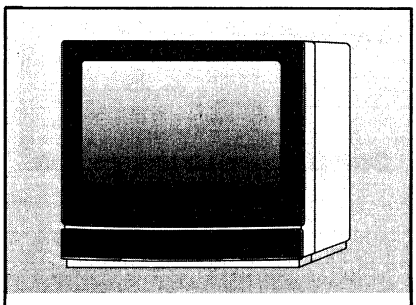
When programing recordings, these Teletext pages then will automatically be called up.

Preparations

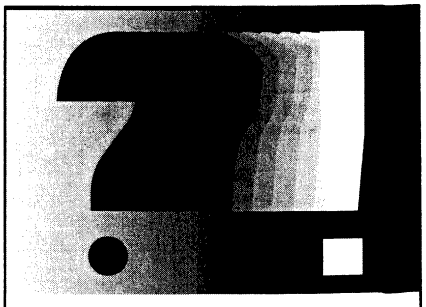
Switch on the TV set.

Select the programme position for video playback on the TV set.
The TV set serves as control monitor.

Press these buttons on the remote control handset

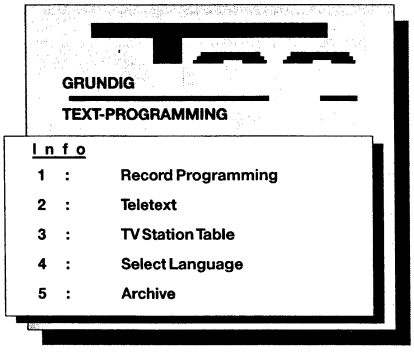


On the picture screen of your TV set appears



Explanations

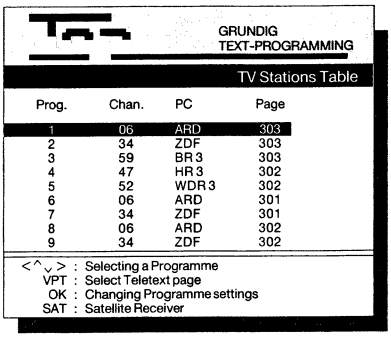
1. Call up the Info page



Press these buttons on the remote control handset	On the pciture screen of your TV set, you see	Explanations

2. Selecting the TV Stations Table

3



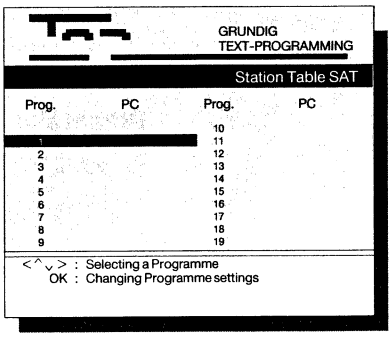
Programme position 1 is activated (marked by blue line).

The first programme positions are occupied by channel numbers, station abbreviations, and the Teletext page numbers.

If you wish only change the number of the Teletext page, then press button VPT and continue with point 7.

Selecting the satellite stations table

SAT

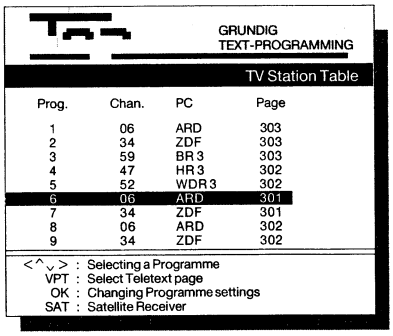


If you wish only enter satellite programmes, then press the SAT button – the SAT stations table appears in blue.

3. Selecting a programme position

a) step by step

▼ or ▲



Step-by-step selection

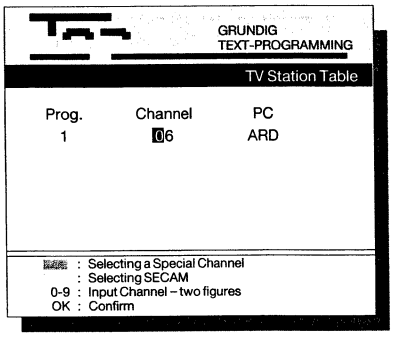
b) to further programme positions

▶ or ◀

The stations table is switched to the programme positions 10-19, etc. up to 40-49 (80-99 for satellite programmes) with button ▶, and back to the programme positions 30-39 etc. down to 1-9 with button ◀.

4. Changing the programme allocation of a programme position.

OK



The data of the programme position appears on the screen, the first position of the channel number is marked by a cursor (▮).

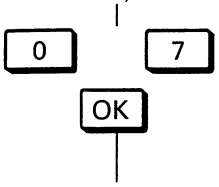
For satellite programmes, the channel numbers are not required. Continue with point 6.

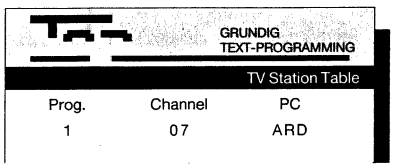
Press these buttons on the remote control handset	On the picture screen of your TV set, you see	Explanations

5. Entering the channel number

Select the required setting out of the points 5a to 5d according to the programme type.

a) for TV programmes (PAL colour norm)

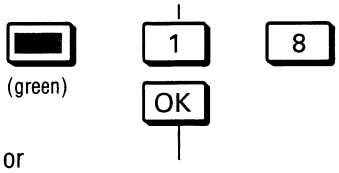


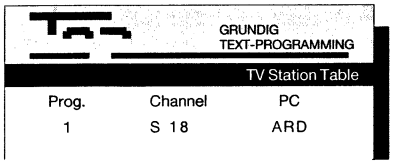


Enter the required channel number as two figures with the numbered buttons [1], [2] to [9], [0] an confirm with button [OK].

or

b) for cable TV programmes (PAL colour norm)

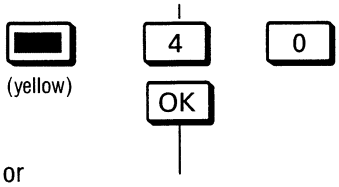


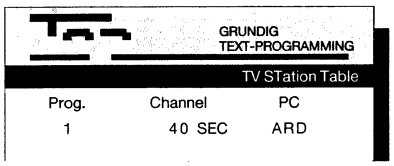


Symbol for cable TV programmes: »S«.

or

c) for TV programmes (SECAM colour norm)

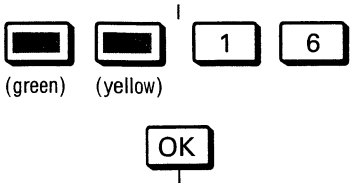


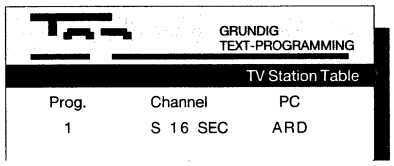


Symbol for SECAM colour norm: »SEC«.

or

d) for cable TV programmes (SECAM colour norm)





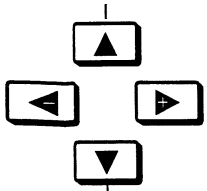
Symbols for cable TV programmes and SECAM colour norm: »S« and »SEC«.

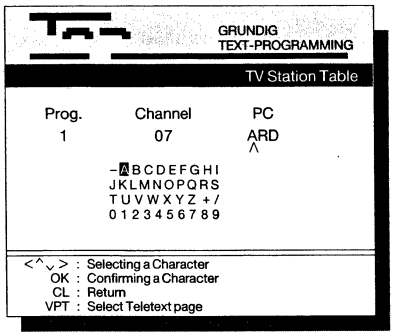
After the entry of the channel number, the recorder adopts the station abbreviation from the TV station.
Requirement for this is that the TV station broadcasts a VPS signal.

6. Entering a station abbreviation
(max. 4 positions)

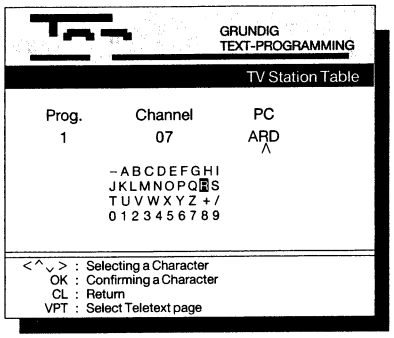
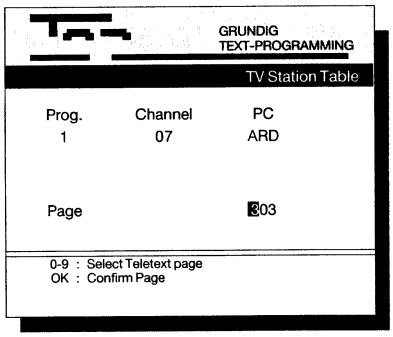
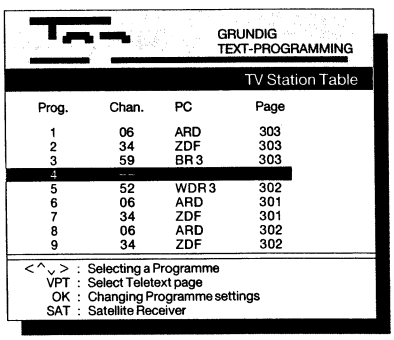
For satellite programmes, enter the station abbreviations on the same programme positions as those used on the satellite receiver.

a) Selecting a letter/character

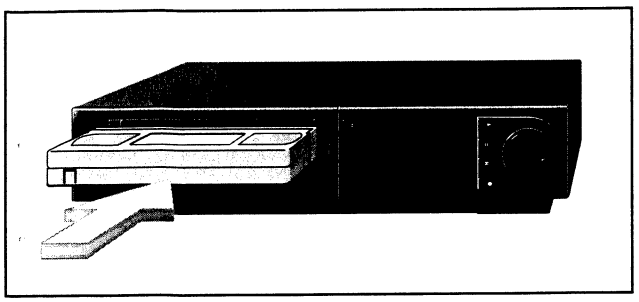




Select the required letters/characters with the buttons [◄], [►], [▼] or [▲]. A blank can be found in the characterset between the letter "Z" and the character "+".

Press these buttons on the remote control handset	On the picture screen of your TV set, you see	Explanations
b) Confirming the letter/character OK		Confirm the letter/character with the button OK. The cursur (^) jumps to the second position. Pressing the CL button will move the cursor (^) one position to the left. Repeat the entry for the 3 following positions. When adjusting satellite programmes, the station table appears again after the entry of the last position. Continue with point 3.
7. Entering the Teletext page number a) Confirming the page number OK or b) Entering the page number. 3 0 2 OK		For record programming acc. to the variants 2 and 3, the entry of the page numbers is absolutely necessary. On the programme positions 30 to 49 and for all satellite programmes, it is not possible to enter Teletext page numbers. Enter the page numbers as three figures – in our example the page 302 with the numbered buttons 3 0 2 and confirm with the button OK. The entries for the programme position are thus completed. The TV Stations Table will appear again. Continue the adjustmet of further TV programmes with point 3.
8. Erasing the data of a programme position ▼ or ▲ CL		If you not longer require the data for a TV programme, you can erase this data. Select the programme position. The data is erased. The programme position is free and can be used again.
9. Terminating the adjustments ⏻		You will see the current TV programme.

Inserting a Cassette



Push the cassette with its window uppermost and the lettering visible into the cassette compartment until it is automatically pulled in.
The recorder is thus switched on.

Playing Time Recognition

After having pushed in the cassette, the recorder measures the tape time (indication ATTS) and briefly indicates the total playing time in hours (e.g., C3) if the used cassette is a standard hours cassette.

Indication of the total playing time

Cassette	Indication on the recorder
E 60 (60 mins.)	C1
E120 (120 mins.)	C2
E180 (180 mins.)	C3
E240 (240 mins.)	C4

If a 5-hours cassette E 300 is used, it is necessary to enter the total playing time so that the correct indication of the total playing time and of the elapsed playing time is obtained.

Indications with cassettes not stored or stored posteriously into the archive, e.g.:
C3 ---- = total playing time
CASS№ = prompt for entering the cassette number.
It is possible to call up the elapsed playing time by pressing the button OK.

Indication with cassettes stored into the archive, e.g.:
C3 0:00 = total playing time, elapsed playing time
№ 100 = cassette number

After having started the tape run function, the elapsed playing time will be indicated in hours and minutes.
On the recorder appears for example the indication 0:01 for 1 minute elapsed playing time.
If non-standard cassettes are used, the recorder will automatically switch to the 5-digit tape length indication.
The indication 0:00:10 appears on the recorder.

Entering the total playing time

It is principally possible to enter the total playing time (in minutes) for any cassette.

Enter the total playing time with the numbered buttons 1, 2 to 9, 0 of the remote control handset and confirm the entry with the button OK.

E.g. 0 3 0 OK for a cassette with 30 mins. playing time
1 9 5 OK for a cassette with 195 mins. playing time.

This applies also for the exceptional cases where the tape length indication on the cassette and the indication of the total playing time in the display differ.

Switching over to the five-digit tape length indication

Press the button OK.
A five-digit indication appears on the recorder.

It is possible to reset the tape length indication to 0:00:00 by pressing the button 0 and then the button OK.

If the tape is wound back beyond the indication 0:00:00, a minus sign will appear in front of the first digit.

If the tape length indication stops during a tape run function, there is no recording on the respective tape section.

When inserting a cassette, the tape length indication is automatically reset to 0:00:00.

To switch from the five-digit tape length indication back to the indication of the total and the elapsed playing time, again press the button OK.

Entering a Cassette Number

When the recorder has measured the tape time after having inserted a cassette, the following possible indications will appear:

a) Indications with cassettes not stored or stored posteriously into the archive, e.g.:
   C3 ---- = total playing time
   CASSNº = prompt to enter a cassette number.

So that you can use the archive system, you must enter the cassette number as three digits with the numbered buttons [1], [2] to [9], [0] (e.g., [0] [3] [0] for the cassette No 30), and confirm the entry with the button [⏎].
If the indication E---- appears in the recorder display after having entered the cassette number, there is not yet an entry existing in the archive and you must enter the total playing time of the cassette.
(See chapter »Playing Time Recognition«, page 19).

b) Indications in the case of cassettes stored in archive, e.g.:
   C3 0:00 = total playing time, elapsed playing time
   Nº 100 = cassette number

The list of contents of the cassette is shown on the picture screen.

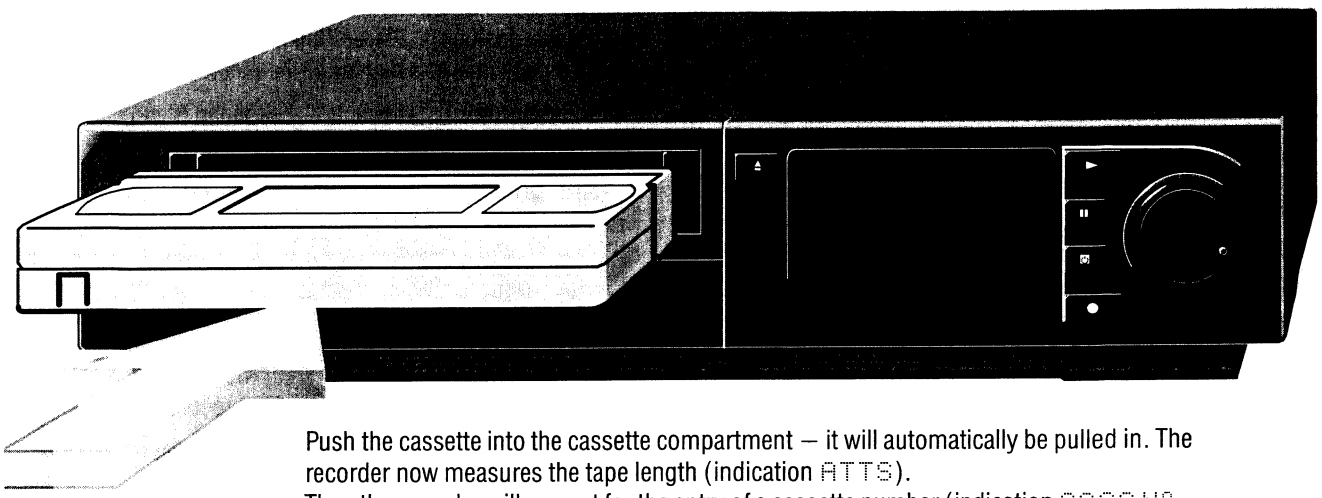
To switch to the television picture, press the button [⏎].

When the recorder is in the STOP position, you can call up the cassette number, the total playing time, and the elapsed time of a loaded cassette by pressing the button [⏎].

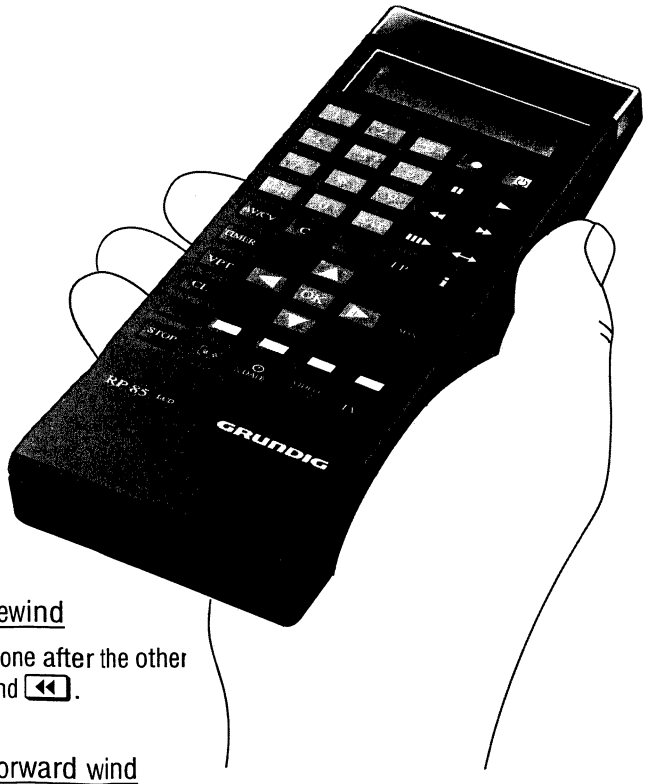
3. Playback Basic Function

Brief Operating Instructions

Playback operation is possible with the buttons of the remote control handset or with the controls of the recorder.



Push the cassette into the cassette compartment – it will automatically be pulled in. The recorder now measures the tape length (indication ATTS).
Then the recorder will prompt for the entry of a cassette number (indication CASS Nº= ==). You must enter this number if you wish to use the archive system (see the explanations to the archive system, pages 58 and 59).



Playback

Press ▶.

Pause/Freeze-frame

To stop playback, press ⏸.

To resume playback, press ▶.

STOP

Press ⏻, all functions are stopped.

Cassette removal

Press ⏏ on the recorder.

Fast rewind

Press one after the other ⏻ and ◀◀.

Fast forward wind

Press one after the other ⏻ and ▶▶.

For further tape wind functions, see pages 27 to 28.

For detailed playback functions, refer to pages 22 to 26.

All Playback Functions at a Glance

Function	Indication on recorder
Playback	▷
Freeze-frame	▯▯
Frame-stepping	▯▯ JOG
Slow motion	▯▯▷
Slow motion, variable	▯▯▷ – SLOW +
Forward picture search*	▷▷
Reverse playback*	◁
Reserve slow motion*	◁▯▯
Reverse*, variable slow motion	◁▯▯ – SLOW +
Reverse picture search*	◁◁

* with interference bars (ecxept on forward picture search with double speed).

Playback of SECAM Colour Broadcasts

When playing back recordings of SECAM colour broadcasts, you must press in addition the button [C].
SEC appears on the recorder.
When playback is completed, press the button [C] once again.
SEC disappears from the display.

Longplay Mode

When playing back a longplay recording, the recorder switches automatically to longplay playback mode.
LP appears in the display of the recorder.

With the functions slow motion, freeze-frame, and picture search, interferences of colour reproduction may occur in the longplay mode.

Picture Sharpness (Crispening)

Press the button [⊟]. CRISP appears in the display of the recorder.
Adjust the picture sharpness for subjectively best impression by repeatedly pressing the button [▲] or [▼].
Shortly after completion of the setting, the indication CRISP will disapper.

Selecting the Sound Track

When playing back cassettes which have been recorded with stereo or two-channel-sound broadcasts, you can select the desired sound track with the button [1].

Basic position = Stereo (hifi helical track)
∞ appears in the display of the recorder.

Press button [1] once = sound track 1
1 appears in the display of the recorder.

Press button [1] twice = sound track 2
2 appears in the display of the recorder.

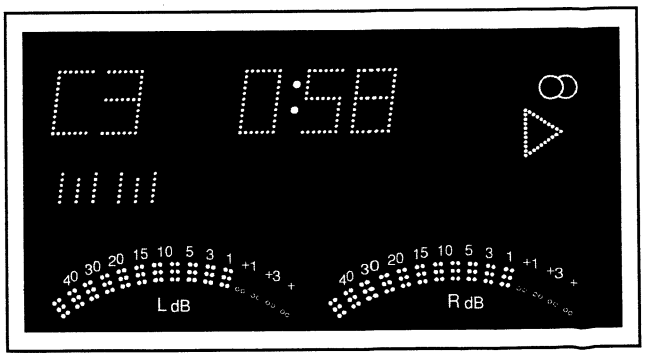
Press button [1] three times = mono/longitudinal track
No indication.

Press button [1] four times = mix mode (hifi helical track, mono/longitudinal track).
MIX appears in the display of the recorder.

Press button [1] five times = back to basic position.

Optimizing the Picture/Sound Quality

You can optimize the picture/sound quality with button [▲] or [▼].
If a recording exists on the hifi (helical) track, an adjustment aid will appear below the playing time indication in the display of the recorder. The more vertical lines are visible, the better is the playback quality.



If the picture jumps or scrolls when playing back cassettes recorded on another recorder, then press the numbered buttons [8] [5] [1] [1] and then the button [OK] to eliminate this failure.

3. Playback Comfort Functions with Jog-Shuttle

This recorder is provided with numerous comfort functions for playback.

These comfort functions can be commanded without any problems with the buttons and the »Jog« wheel (inner wheel) and the »Shutter« ring (outer ring) on the front panel of the recorder, and with some buttons on the remote control handset.

These comfort functions are optimized for use and very helpful if you wish to electronically edit your recordings (joining or inserting new pictures or passages to or into already existing recordings).

The »Jog« wheel and the »Shuttle« ring can be unlocked by pressing on them.

The following adjustment possibilities are available:

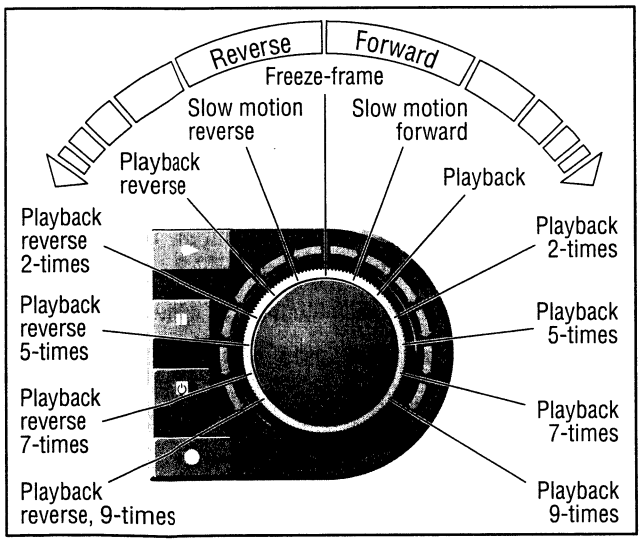
Playback speeds – forward or reverse – with the Shuttle ring.

Freeze-frame stepping – forward or reverse – with the Jog wheel.

Step-by-step selection of the slow-motion speeds – forward or reverse – with the Jog wheel.

Adjusting Different Playback Speeds in Forward or Reverse Direction with the Shuttle Ring of the Recorder

It is possible to adjust the following playback speeds in forward or reverse direction:
2-, 5-, 7- and 9-times the normal playback speed.



During playback, switch to freeze-frame (playback-pause) with the Shuttle ring.

When now turning the Shuttle ring to the right through its indexed positions, the playback speed will be increased step by step in forward direction up to maximum speed (9-times).
You can turn the Shuttle ring even further, but the speed will be not more increased.

When now turning the Shuttle ring to the left, the playback speed will be reduced per indexed position until the initial position of the freeze-frame is reached.
When now turning the Shuttle ring further to the left, the playback speed will be increased again per indexed position, but this time in reverse direction up to maximum speed (9-times).
You can turn the Shuttle ring even further, but the speed will be not more increased.

By turning the Shuttle ring back again, you can adjust any desired playback speed.

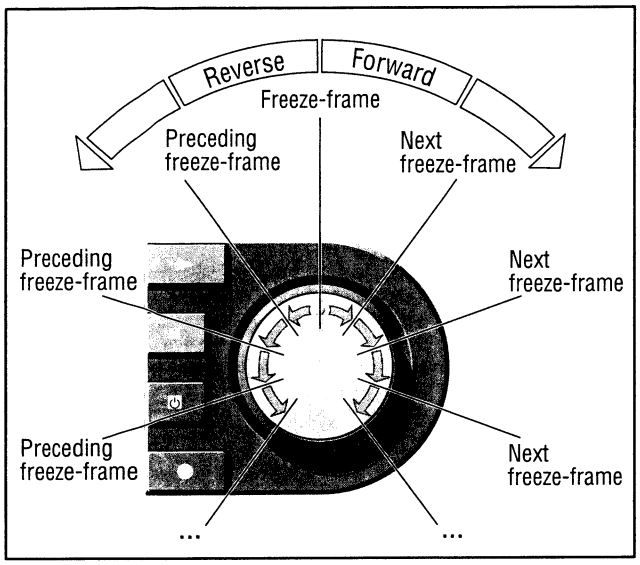
If the picture trembles or appears unsteady during the playback functions freeze-frame, slow motion forward, and playback 2-times forward, you can optimize the picture quality.

Press the numbered buttons [8] [5] [2] [8] and then the button [OK] on the remote control handset.

AF appears in the display of the recorder.

Now adjust for subjectively best picture impression with button [▲] or [▼], and then press the button [OK].

Forward or Reverse Freeze-Frame Stepping with the Jog Wheel of the Recorder



During playback, switch the recorder with the Shuttle ring to freeze-frame mode (playback-pause).

With the help of the Jog wheel, you now can examine each single preceding or following freeze-frame:

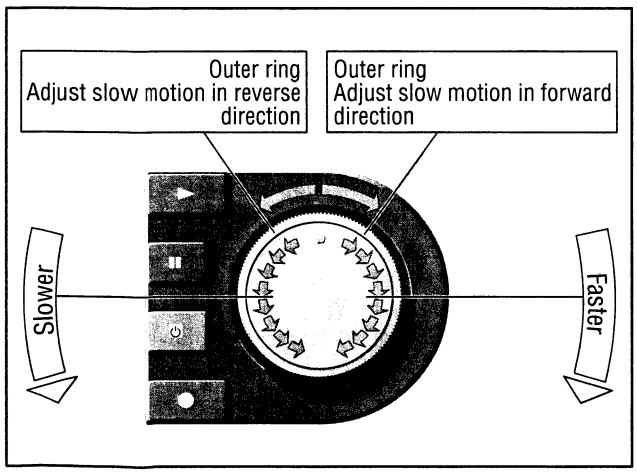
To step to the next freeze-frame, turn the Jog wheel to the right, or
to step to the preceding freeze-frame, turn the Jog wheel to the left (see Figure opposite).

The indication JOG ▯▯ appears on the recorder.

Depending on the direction of rotation, each indexed position switches to the preceding or followin freeze-frame.

Here again, you can select any desired playback speed with the help of the Shuttle ring.

Adjusting the Slow Motion Speed in Forward or Reverse Direction with the Jog Wheel



During playback, switch the recorder with the Shuttle ring to forward or reverse slow motion.

The slow motion speed can be modified with the Jog wheel.

To decrease the slow motion speed, turn the Jog wheel to the left (see Figure opposite), or
to increase the slow motion speed, turn the Jog wheel to the right.

The following indication will appear in the display:
– SLOW + ◁▯▯ or – SLOW + ▯▯▷

Depending on the direction of rotation, each indexed position of the wheel will increase or decrease the speed by one step.

Here again, any desired playback speed can be adjusted with the Shuttle ring.

Adjusting Different Playback Speeds in Forward or Reverse Direction with the Remote Control Handset

Switch the recorder to freeze-frame mode (playback-pause) by pressing the button ▶ and then the button ⏸.

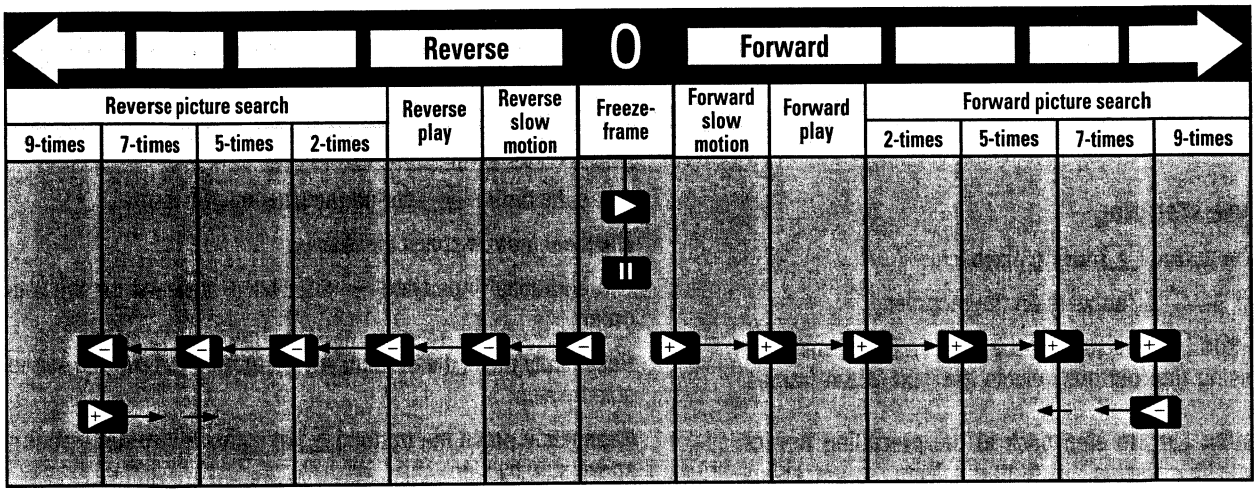
Adjust the desired direction and speed of playback with button ◀ or ▶ (see Figure below).
By repeatedly pressing the button ▶, each pressure will increase the playback speed by one step in forward direction.
After 6 pressures on the button, the maximum playback speed (9-times forward) is reached.

When now repeatedly pressing the button ◀, the playback speed will be reduced step by step until the initial »freeze-frame« position is obtained again.

When continueing pressing the button ◀, the playback speed will be increased again, but this time is reverse direction.
After the 6th pressure on the button, the maximum playback speed (9-times reverse) is reached.

With the button ▶, you again can adjust any desired playback speed in forward direction.

All playback functions selectable with the remote control handset



Adjusting Different Playback Speeds in Forward or Reverse Direction with the Remote Control Handset

Playback-pause/freeze-frame

The freeze-frame function is time-limited. After that, the recorder switches to Stop.

Press the button [II] during playback.

The indication II appears on the recorder.

Optimizing the freeze-frame quality

If the freeze-frame trembles or appears unsteady, it can be optimized.

For this, press the numbered buttons [8] [5] [2] [8] and then the button [OK].

The indication A7 appears on the recorder.

Now adjust the freeze-frame for the subjectively best impression with the buttons [▲] and [▼], and then press the button [OK].

Press the button [►] to switch back to playback.

Freeze-frame stepping

Press twice the button [II] during playback.

The indication JOG II appears on the recorder.

Press the button [►] to step to the next freeze-frame. Repeatedly pressing this buttons selects the next freeze-frames step by step.
Press the button [◄] to step back to the preceding freeze-frame. Repeatedly pressing this button selects the preceding freeze-frames step by step.

Reverse play

Press button [II] and then twice the button [◄] during playback.

The indication ◁ appears on the recorder.

Press the button [►] to return to normal play.

Slow motion

Forward slow motion

Press the button [II►] during playback to select this funciton.

The indication II▷ appears on the recorder.

Optimizing the slow motion picture

If the slow motion picture trembles or seems unsteady, it can be optimized.

For this, press the numbered buttons [8] [5] [2] [8] and then the button [OK].

The indication A7 appears on the recorder.

Now adjust the slow motion picture for subjectively best impression with the buttons [▲] and [▼], and then press the button [OK].

Reverse slow motion

Press the button [II] and then the button [◄] during playback to select this function.

The indication ◁II appears on the reocrder.

Modifying the slow motion speed

Press the button [II►] during the slow motion mode.

The slow motion speed decreases.

The additional indicaiton – SLOW + appears on the recorder.

Repeatedly press the button [◄] to decrease the motion speed step by step.

Repeatedly press the button [►] to increase the slow motion speed step by step.

To return to normal slow motion speed, press the button [II►].
To return to normal play, press the button [►].

Forward picture search

(7-times normal playback speed)
Press the button [►►] during playback.
The indication ▷▷ appears on the recorder.

Press button [►] to return to normal playback.

Reverse picture search

(7-times normal playback speed)
Press the button [◄◄] during playback.
The indication ◁◁ appears on the recorder.

Press button [►] to return to normal playback.

4. Fast Tape Wind and Search Functions

Fast Tape Wind

There are two possible methods for fast winding the tape:

With the buttons of the remote control handset, or
with the Shuttle ring on the recorder.

Fast tape wind with the remote control handset

Press the button [⏻].

Press button [⏩] for fast forward wind.

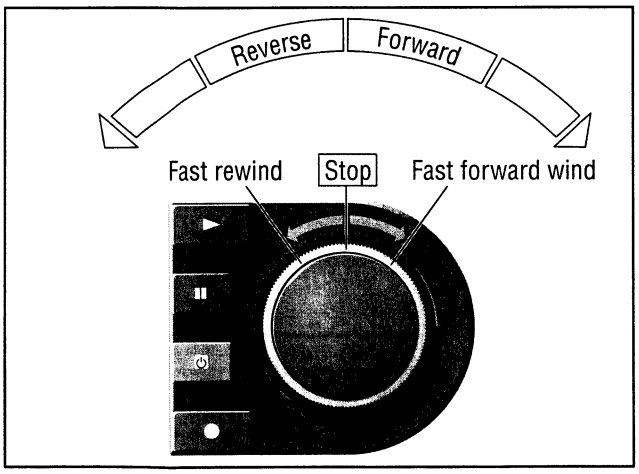
Press button [⏪] for fast rewind.

At the beginning or the end of the tape, the recorder switches to Stop.

Press button [⏻] to stop the fast wind functions.

Fast tape wind with the Shuttle ring on the recorder

Press the [⏻] button.



The Go-To function

With this function, you can automatically wind the tape to a certain position.

For this, two methods are possible:

By entering the elapsed playing time, or
by entering the tape position.

Go-To by entering the elapsed playing time

If the display of the recorder is in the tape length indication mode, press button [OK] to switch it to the playing time indication mode.

Enter the playing time (e.g., 48 minutes) as three figures with the numbered buttons [1], [2] to [9], [0] and then press the button [↔].

Enter the elapsed playing time (e.g., 48 minutes) [1], [2] to [9], [0] and then press the button [↔].
When the last entry is completed, the tape is wound to the respective tape position and playback is started.

> For selecting the elapsed playing time with non-standard hours cassettes, you must first enter the total playing time with the numbered buttons [1], [2] to [9], [0] and confirm the entry with the buttton [OK].

Go-To by entering the desired tape position

If the display of the recorder shows the playing time, press the button [OK] to switch to the tape length indication mode.

Enter the desired tape position with the numbered buttons [1], [2] to [9], [0] as three figures (the last two figures must be omitted).
Press the button [↔] to start the Go-To function.

> If you wish to wind the tape to a negative tape position, then you must enter this by pressing the button [◀].

1st example: The tape is at position 1 : 30 : 24
Desired tape position = 0 : 50 : 25
Entry = [0] [5] [0] [↔]

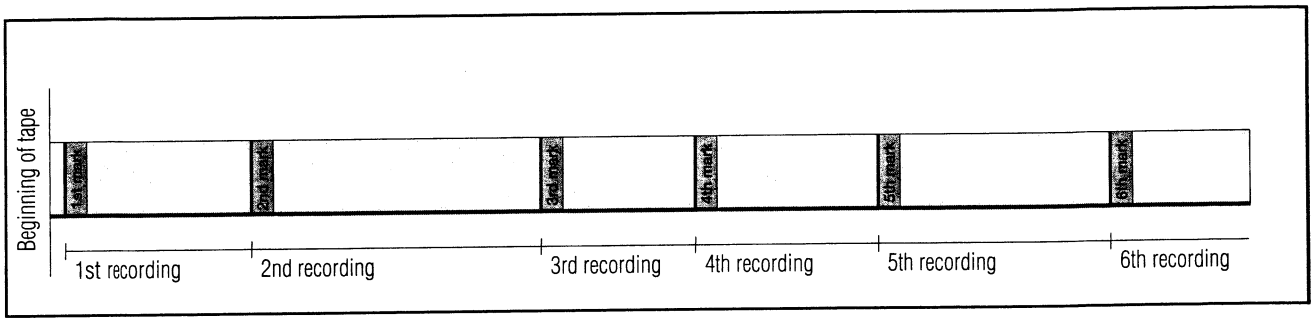
2nd example: The tape is at position – 1 : 05 : 34
Desired tape position = – 0 : 45 : 30
Entry = [0] [4] [5] [◀] [↔]
When the last entry is completed, the tape is automatically wound to the desired position and playback is started there.

4. Fast Tape Wind and Search Functions

Automatic Programme Finder (APF-System)

With this system, you can quickly and precisely find the beginning of any of your own recordings.

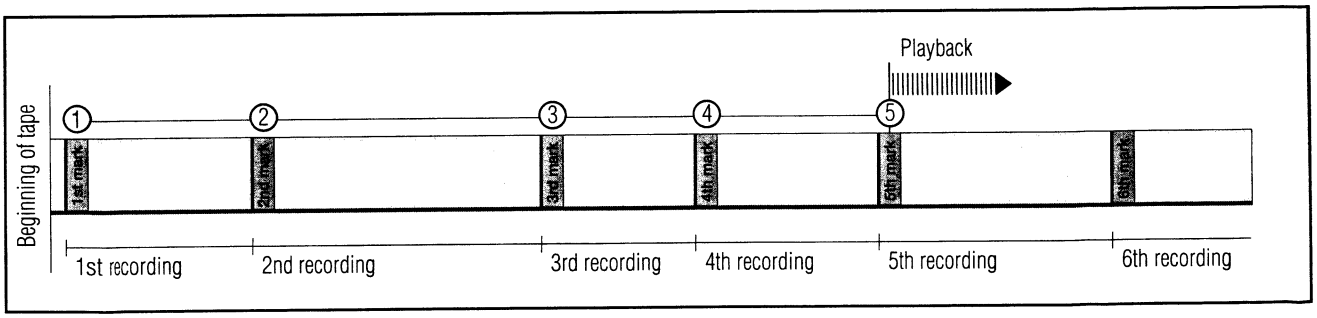
For this, electronic "marks" (VISS marks) are automatically set at the beginning of each of your own recordings.
These marks are always related to the beginnning of the tape.



Example:

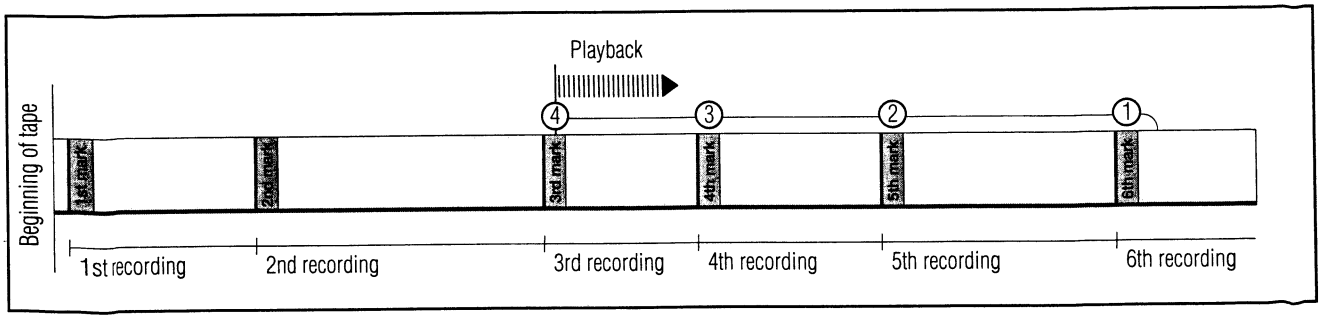
The tape is wound to its beginning and you wish to see the 5th recording. Press the numbered button [5] for the 5th mark and then the button [⏩].

The indication APF 5≫ appears on the recorder.
The tape is automatically wound to the beginning of the 5th recording and playback is started there. During the search run, the display shows the marks that the tape has still to pass.



If you wish to see the 3rd recording – related to the beginning of the tape – after the 5th recording (= 6th mark), then you must go back three recordings (= 4 marks).
For this, press the numbered button [4] and then the button [⏪].

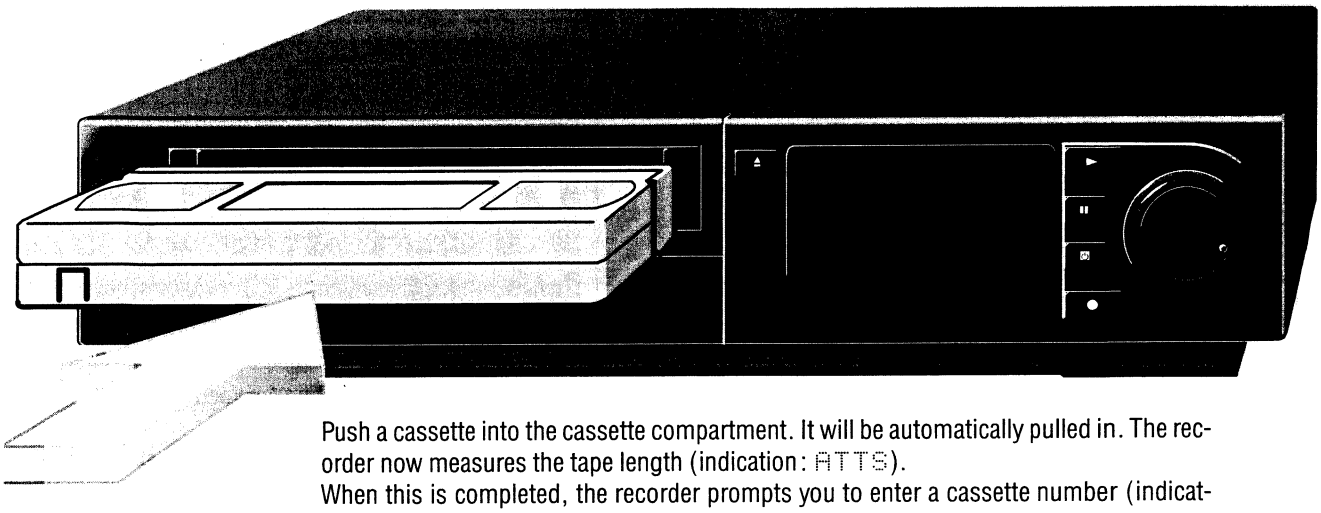
The indication APF 4≪ appears in the display.
The tape is automatically rewound to the beginning of the 3rd recording and playback is started there. During the search run, the display shows the marks that the tape has still to pass.



5. Starting Recording Immediately Basic Function

Brief Operating Instructions

You can make recordings either with the help of the remote control buttons or with the controls on the recorder.



Push a cassette into the cassette compartment. It will be automatically pulled in. The recorder now measures the tape length (indication: ATTS).
When this is completed, the recorder prompts you to enter a cassette number (indication: CASS Nº ▬ ▬ ▬).
You must enter this number only if you wish to use the archive system (see the explanations on the archive system, pages 58 and 59).

Selecting a programme position

Press button ▼ or ▲ on the remote control handset,

or

use the Jog wheel on the recorder.

Starting recording

Press the button ● for a longer time.

STOP will flash several seconds in the recorder display.
If you wish to enter a Stop time, refer to chapter "Entering a Stop Time", page 30).

Interrupting recording

Press button ⏸.

To continue recording,
press button ●.

Terminating recording

Press button ⏻.

If no Stop time is entered, the display will switch after a short time to the hours/minutes indication mode and recording is continued up to the tape end.
There the recorder switches automatically to rewind, rewinds the tape to the beginning, and switches to Stop.
For a detailed description of the recording functions, refer to the pages 30 to 32.

5. Starting Recording Immediately

Preparations

1. Switch on the TV set.
2. Select the AV programme position for video playback on the TV set (serves as control monitor).
3. Insert a cassette with sufficient playing time not protected against erasure (recording).

If you wish to use the archive system, then please observe the following points:
If the indication CASSN?---- appears in the display after completion of the tape length measurement, then you must enter the cassette number (see page 20).
If there is already a cassette loaded, you can call up the cassette number, the total playing time, and the elapsed playing time by pressing the button [▭]. When starting recording, the recorder will automatically accept the following data into the archive: the tape stop time, the date, and »DIVERS« as sybject; the station abbreviation and the start time as title. When recording is completed, you can modify the subject and the title (refer to chapter "Informing about the Cassette Contents", from page 69 on).

Selecting a Programme Position

Programme positions which are not occupied by a programme cannot be selected.

Television programmes

Enter the desired TV programme position as one or two figures with the numbered buttons [1], [2] to [9], [0], and then press the button [▲],

or

Satellite programmes

Enter the desired satellite programme position as one or two figures with the numbered buttons [1], [2] to [9], [0], then press the button [SAT], and then the button [▲].

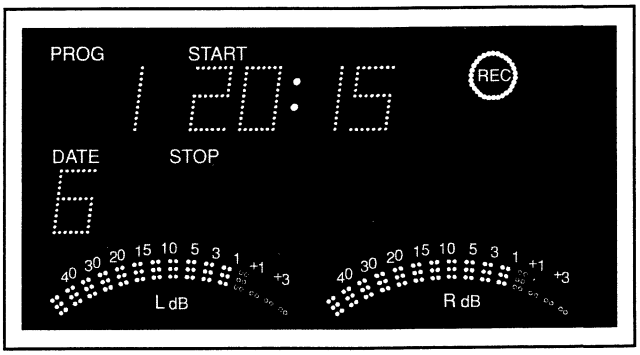
The selected programme is visible on the picture screen of your TV set.

Selecting the Longplay Mode

You can double the playing time of the cassette by pressing the button [LP].
The indication LP appears on the recorder.

Starting Recording

Press button [●] a longer time. Recording begins and the display shows for example:



PROG = Programme position 1 selected
REC = Recording indication
DATE = Date; the 6th day of the month in this example.
STOP = Flashing prompt to enter a stop time.

Entering a Stop Time

If no Stop time is entered, the display will switch after a short time to the hours/minutes indication mode and recording is continued up to the tape end.
There the recorder switches automatically to rewind, rewinds the tape to the beginning, and switches to Stop.

There are two possible methods for entering the stop time:
Entry exactly to the minute.
Entry in 30-minutes steps.

Entry exactly to the minute of the stop time

Enter the desired stop time as four figures with the numbered buttons [1], [2] to [9], [0] and confirm with button [●].

If the recording is stored in archive, the cassette number will briefly appear in the display.
Then the display will indicate the remaining playing time and then the elapsed playing time, the programme position and the station abbreviation.

▶▶

5. Starting Recording Immediately

Entering the stop time in 30-minutes steps

Enter the desired stop time by repeatedly pressing the button ⏺ (max. 10 times = 300 minutes).

After several seconds, the elapsed playing time, the programme position, and the station abbreviation will be indicated.

Modifying the stop time

If you wish to modify the stop time during recording, then press the button ⏺, enter the new stop time with the numbered buttons 1, 2 to 9, 0, and confirm the entry with the button ⏺, or repeatedly press the button ⏺ until the desired stop time is reached.

Setting Marks

During recording, you can set marks on the tape with the button Insert ○ Stop.

Recording-Pause

Press the button ⏸ during recording.

Continue recording with button ⏸ or button ⏺.
The recording-pause function is time-limited. After that, the recorder will switch to stop.

Terminating Recording

Press the button ⏻ to terminate recording.

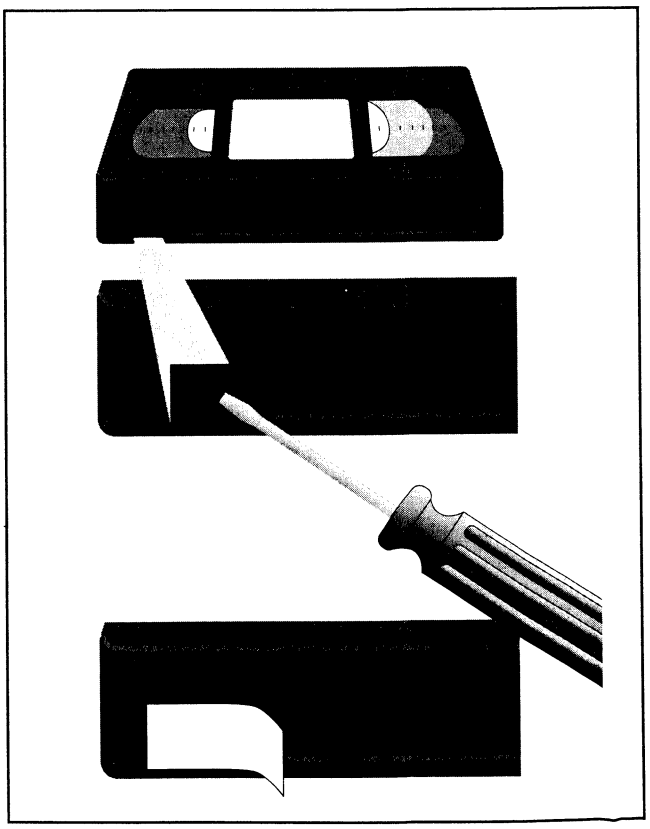
Assembly-Editing
Assembling Recordings with Clean Joins

During playback, search the tape position where you wish to join the new recording, then press the button ⏸.

Switch the recorder to recording-pause by pressing the button ⏺ a longer time, then select the desired programme with button ▲ or ▼.
Start the »new« recording by pressing button ⏺.
When playing back the assembled recordings, you will see the joins between them without any interferences.

Erase Prevention

When making a new recording, any recording already on the tape will automatically be erased. To avoid this, a means is provided to prevent your own recordings from accidental erasure/ new recording.
For this, you only must break out the tap of the cassette.
If you wish to record on the same cassette again, cover the hole where the tab has been with sticky tape.



5. Recording, Sound

Particularities of Sound Recording

The different sound tracks

Your recorder has two different recording and playback systems for the sound.

The hifi or helical track for stereo and two-channel-sound recordings.

The mono or longitudinal track for audio playback on standard VHS recorders, for parallel dubbing, and for post-dubbing (adding sound at a later date).

When starting recording, the sound will be recorded on both sound tracks.

Two-channel-sound broadcasts

Both sound tracks will always be recorded on the helical track. On the longitudinal track, only the sound track 1 (mono) is recorded.

In the case of two-channel-sound broadcast, the recorder automatically switches to sound channel 1 (snchronized version). This track can be monitored during recording.
If you wish to monitor the sound channel 2, then press the button [I/II].
The recorder display shows 1 for sound channel 1, and 2 for sound channel 2.

Stereo sound broadcasts

Both sound channels will always be recorded on the helical track.
The mono sound is recorded on the longitudinal track.
During recording, you can select the sound track for monitoring with the button [I/II].

Initial position = Stereo.
The indication ∞ appears on the recorder display.

Press button [I/II] once = left-hand channel.
The indication 1 appears on the recorder display.

Press button [I/II] twice = right-hand channel.
The indication 2 appears on the recorder display.

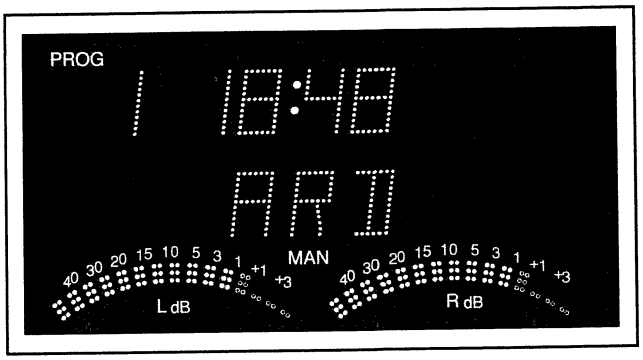
Press button [I/II] three times = back to initial position.

Level control

After having selected the programme (loop-through mode), the recorder automatically controls the recording level (modulation).

If you wish to adjust the recording level manually, then press the button [MAN].
The indication MAN appears on the recorder.

Adjust the recording level with the buttons [◄] and [►] so that the first red mark of the level indication (+1) lights up during the loudest passages of the recording.



The last marks (+3, +6) should not light up (sound overmodulation).

Start recording by pressing the button [●] a longer time.

Parallel dubbing

At the same time when recording the picture, you can record the sound from an external sound source, e.g., a concert being broadcasted simultaneously on the TV programme and on the FM radio programme.
The radio sound will be recorded on the hifi (helical) track, and the television sound will be recorded on the mono (longitudinal) track.

Connection

Connect the external sound source (e.g., a stereo unit) with a commercially available phono cable (Cinch) to the AUDIO sockets on the back of the recorder (refer to connection scheme, page 85).

Recording

Insert a cassette not protected against erasure.

Select the desired TV programme with the numbered buttons [1], [2] to [9], [0], then press the button [Hi-Fi], and then the button [▲].

Start recording by pressing button [●] a longer time.

During recording, you can select the desired sound source by repeatedly pressing the button [I/II] (indication ∞ = radio sound, no indication = television sound).

6. Record Programming The Four Possible Variants

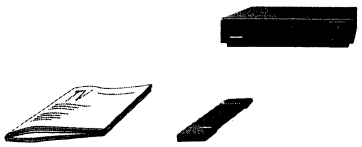
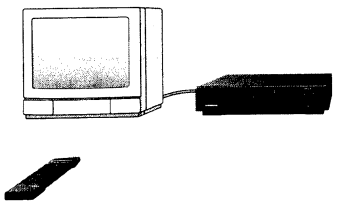
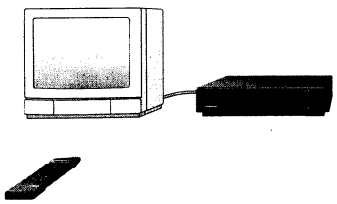
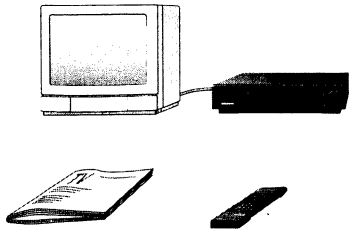
You can programme your recorder so that it records at a later date.

You can programme:

Eight broadcasts over a period of 12 months,
daily or weekly broadcasts at the same time,
with or without storing titles into the archive,
with or without VPS control,
in standard or longplay mode,
with or without parallel dubbing.

Hints for record programming with the VPS signal can be found on page 57.

You can choose between your variants:

The variants	on the pages	What you need	The advantages	Restrictions
1 With the remote control handset and its display	34 to 38		You can programme all TV programmes, also of TV stations without Teletext pages, and satellite programmes.	The title must later be entered into the archive.
2 Fast programming with the VPT button (Text-Programming)	39 to 43		Very fast and comfortable entry. The data is transferred from programme summaries of the TV stations into the recorder. The titles of the broadcasts are transferred into the archive of the recorder by simply pressing a button. Wrong programming is excluded.	Does not work with TV stations operating without Teletext pages.
3 Programming with the remote control handset, Text-programming, and the Teletext pages of the TV stations.	44 to 49		Like variant 2	Like variant 2
4 Programming with the remote control handset, Text-programming, and by manual data entry.	50 to 56		Comfortable entry for broadcasts of TV stations without Teletext pages and for satellite programmes. You enter the data guided step by step by dialogue lines. The titles of the broadcasts can be "written" into the archive of the recorder.	None

6. Record Programming Basic Function, Variant 1

Variant 1, with the Remote Control Handset and its Display

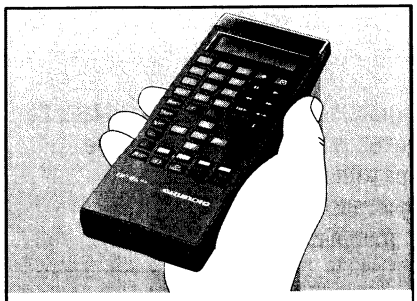
With this variant, you will become acquainted with the conventional way of programming.
You enter the data of the desired broadcast into the remote control handset being guided step by step by the display of the remote control handset.
A flashing indication will prompt you each time to enter the respective data item.

Preparations

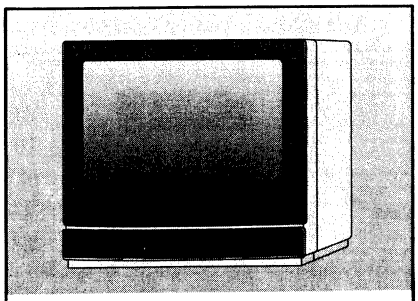
Check the clock time and date of the recorder.

Load a cassette with sufficient playing time, not protected against erasure (new recording).

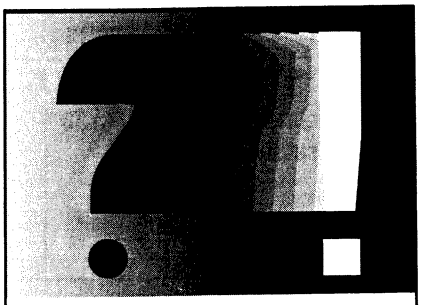
If CASSN°--- appears in the display of the recorder, enter the number of the cassette as three figures with the numbered buttons [1], [2] to [9], [0] and confirm with the button [⏏].



Press these buttons on the remote control handset



On the picture screen of your TV set appears



Explanations

1. Starting programming

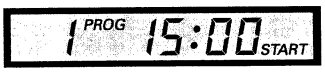
TIMER

The remote control handset is ready to receive data.
If data is still shown on the display, this must be cleared.
If an »F« appears in the display of the remote control handset, then the data was not accepted (e.g., 32.09. = wrong date).

2. Clearing the display

CL

OK



Now you can enter the "new" recording data.

3. Entering the TV programme

1

TIMER

Enter the desired programme as one or two figures — in our example the 1st programme with the numbered button [1].

For the entries for other signal sources (satellite receiver, hifi unit), refer to the pages 36 and 37, points 3a, b, c, d.

▶▶

6. Record Programming Basic Function, Variant 1

Press these buttons of the remote control handset	In the display of the remote control handset appears	Explanations
4. Entering the date 2 4 0 9 TIMER	24 DATE 09 1 PROG START	Enter the desired date (day and month) as four figures – in the example the 24th September – with the numbered buttons 2 4 0 9, and confirm. For the entry for the "daily" and "weekly" functions, see page 37, points 4a, b.
5. Entering the start time 2 0 1 5 TIMER	1 PROG 20:15 START UPS	Enter the desired start time (= beginning of broadcast) as four figures – in our example 20:15 hours – with the numbered buttons 2 0 1 5, and confirm.
6. VPS signal a) confirm TIMER b) or clear 0	1 PROG STOP	If the VPS signal is not required (e.g., if the TV station does not transmit this signal), it must be cleared.
7. Selecting longplay mode LP	LP STOP	This functions permits to double the playing time if desired.
8. Entering the stop time 2 1 4 5 TIMER	1 PROG 21:45 STOP 1 PROG 20:15 START	Enter the desired stop time (= end of broadcast) as four figures – 21:45 hours in the example – with the numbered buttons 2 1 4 5, and confirm. The complete set of data now is in the remote control handset.
9. Transmitting the data to the recorder OK	0	Direct the remote control handset during the data transmission at the recorder, until the symbol 0 in the display of the remote control handset goes out. After having transmitted the data, the recorder is ready for recording.

Following this example, you can enter the recording data for further broadcasts.

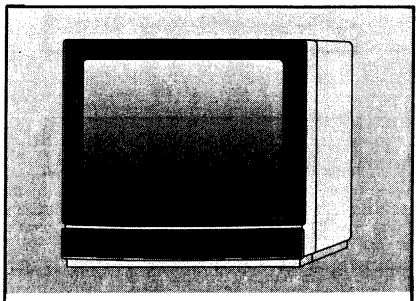
Further operating steps for this variant can be found on the pages 36 to 38.

6. Record Programming Basic Function, Variant 1

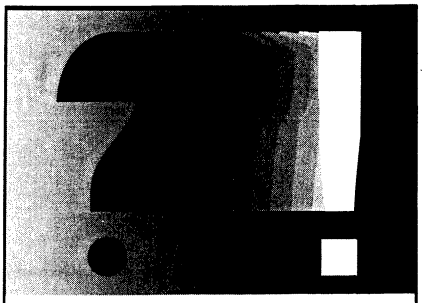
Special functions for the recording variant 1

The shown possibilities are selected instead of the entries on pages 34 and 35, points 3 and 4.

Press these buttons on the remote control handset

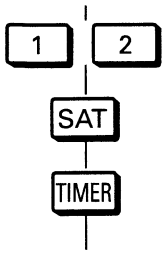


On the picture screen of your TV set appears



Explanations

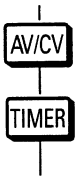
3a Entering satellite programmes



To the socket ⊖ EURO-AV ⊖ and the universal socket (on the back of the recorder), an appropriate GRUNDIG satellite receiver must be connected.

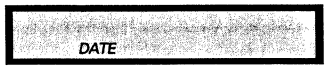
Enter the desired satellite programme as one or two figures (satellite programme 12 in the example with the numbered buttons [1] [2]), then press the button [SAT] and confirm.

3b Entering an AV programme



An AV programme is the video/audio signal of a unit connected to the socket ⊖ EURO-AV ⊖.

3c Entering a CV programme



A CV programme is the video/audio signal delivered by a camera recorder. This is connected to the sockets VIDEO IN and AUDIO IN on the front of the recorder.

▶▶

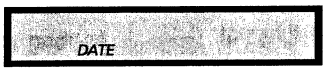
6. Record Programming Basic Function, Variant 1

Press these buttons of the remote control handset	In the display of the remote control handset appears	Explanations

3d Entering a radio programme

Hi-Fi

TIMER

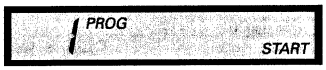


This is the audio signal delivered by a hifi unit connected to the sockets AUDIO R L ⊖ on the back of the recorder.

4a Daily broadcasts at the same time

0

TIMER



Press the numbered button [0] instead of entering the date, and confirm.
The recorder will daily record at the same time until the tape end is reached.

4b Weekly broadcasts at the same time

1 5

0

0

TIMER

Enter the day of the date with the numbered buttons [1], [2] to [9], [0] – [1] [5] for the 15th day in our example, then press twice the numbered button [0] instead of entering the month, and confirm.

The recorder will weekly record at the same time until the tape end is reached.

Correction possibilities

If the symbol appears in the display of the recorder, then again transmit the data by pressing the button TIMER and then the button OK.

The recorder accepts the data from the remote control handset. The recorder is now in the record standby mode and the drive mechanism buttons are from now on blocked.
The remaining playing of the tape will briefly appear in the display of the recorder, (exception: daily or weekly recordings at the same time).
Then the display will show the programme position, the switch-on time, the day of the date, and the station abbreviation of the TIMER position which will be recorded first.

Possible indications on the recorder

If the display of the recorder shows instead of the remaining playing time...

...FULL a cassette with insufficient playing time was loaded.
If the sum of all recording times is greater than the total playing time of the loaded cassette, the recorder will record up to the end of the tape, switch there automatically to fast rewind, rewind the tape to the beginning, and switch to Stop.
Or all TIMER positions of the recorder are occupied.

...-- : -- the total playing time of the cassette has not been recognized.

...CASS the cassette is erase-protected or no cassette is loaded.

...COLL the TIMER recording times overlap each other.

If CASSN?--- appears instead of the cassette number in the display of the recorder, then you must enter the cassette number if you wish that the recording be stored in the archive.
For this, enter the cassette number as three digits with the numbered buttons 1, 2 to 9, 0 and confirm with the button .
When recording is started, the recorder stores automatically »DIVERS« as subject, and the station abbreviation and the start time as title into the archive.
When recording is completed, you can enter a title of your choice and allocate this title a subject – refer to page 69, chapter "Informing about the Cassette Contents".

Switching off the display of the remote control handset

Press the button .
The display goes out, but the TIMER data can be retrieved by pressing the button TIMER.
After approx. 1 minute, the display is automatically switched off.

Checking the occupied positions TIMER of the recorder

For this, the display of the remote control handset must be switched off.

Select the respective TIMER position by repeatedly pressing the button until the display of the recorder shows the desired TIMER position and the corresponding TIMER indication flashes.
As long as the TIMER indication is flashing, you can call up further data items of this TIMER position by pressing the button OK:
The date by pressing the button once.
The cassette number by pressing the button once again.
The remaining playing time by pressing the button once again (not with "daily" or "weekly" recordings at the same time).

Erasing an occupied TIMER position of the recorder

For this, the display of the remote control handset must be switched off.

Select the respective TIMER position by repeatedly pressing the button , until the data to be erased is shown in the display of the recorder.
Press the button CL to clear the data of the TIMER position.

Interrupting the record standby mode

If you have programmed TIMER positions but wish to use the recorder when it is in the record standby mode, then press the button on the recorder. The cassette will automatically be ejected,
or
press a longer time the button on the remote control handset.
The TIMER data in the display of the recorder disappears, the TIMER indication of the TIMER position for the first programmed recording flashes, and the data remains stored in memory.

The record standby mode of the recorder is now interrupted.

Now select the desired function.

When the function is completed, again insert a cassette with sufficient playing time, wait until the ATTS measurement is completed, and then press the button a longer time.
The cassette number will briefly appear in the display of the recorder.
If the indication CASSN?--- appears instead of the cassette number, then you must enter the cassette number if you wish to store the recording into the archive.
For this, enter the cassette number as three digits with the numbered buttons 1, 2 to 9, 0 and confirm the entry with the button .
The recorder now is in the record standby mode again and the TIMER recordings will be made at the programmed times.

6. Record Programming

Variant 2
Fast Programming with the VPT Button

Preparations

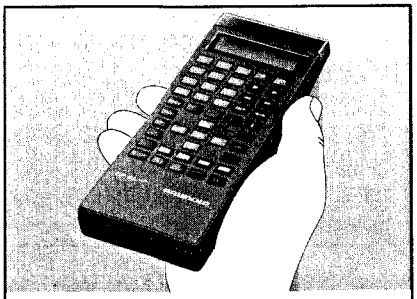
Switch on the TV set.

Select the AV programme position for video playback on the TV set (serves as control monitor when entering the data).

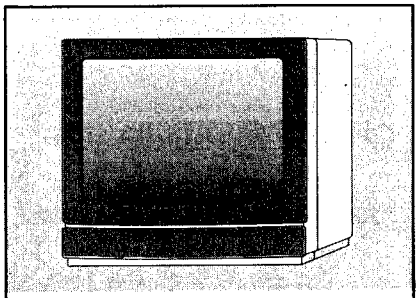
Load a cassette with sufficient playing time not protected against erasure (new recording).

If the indication CASSN?---- appears in the display of the recorder, then enter the cassette number as three digits with the numbered buttons [1], [2] to [9], [0] and confirm the entry with the button [⏏].

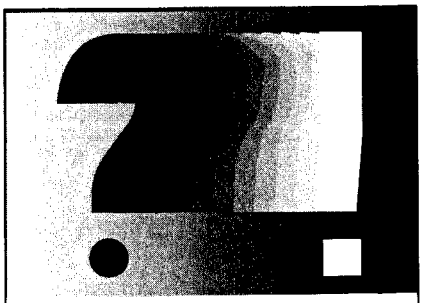
Programming example



Press these buttons on the remote control handset



On the picture screen of your TV set appears



Explanations

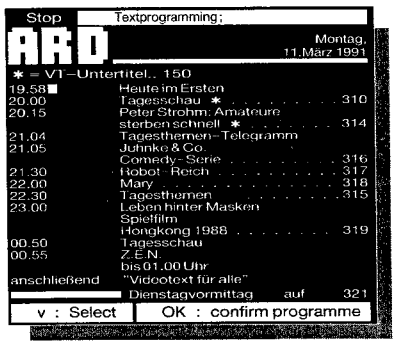
1. Selecting a TV programme

[1]

Enter the desired TV programme – in the example the First Programme with the numbered button [1] (possible with the programme positions 1 to 29).

2. Calling up a Teletext page

[VPT]


Stop
Textprogramming:
ARD
Montag, 11.März 1991
* = V1-Untertitel.. 150
19.58 Heute im Ersten
20.00 Tagesschau * 310
20.15 Peter Strohm: Amateure sterben schnell! * 314
21.04 Tagesthemen-Telegramm
21.05 Juhnke & Co.
Comedy-Serie 316
21.30 Robot Rech 317
22.00 Mary 318
22.30 Tagesthemen 315
23.00 Leben hinter Masken
Spielfilm
Hongkong 1988 319
00.50 Tagesschau
00.55 Z.E.N.
bis 01.00 Uhr
anschließend "Videotext für alle"
Dienstagvormittag auf 321
v : Select
OK : confirm programme

On the Teletext programme summary, a cursor (▮) appears beside the start time of the first broadcast.

If the cursor does not appear, then press the button [OK].

6. Record Programming Variant 2

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations

3. Selecting a broadcast

▼ ⋮ ▼

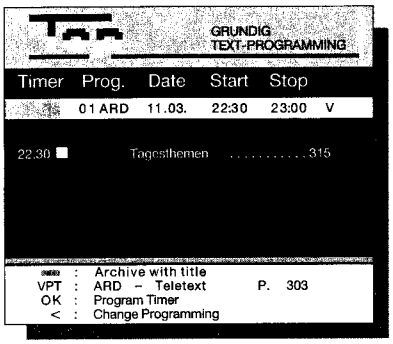
Stop
Textprogramming:
ARD
Montag,
11.März 1991
* = VT-Untertitel.. 150
19.58 Heute im Ersten
20.00 Tagesschau * 310
20.15 Peter Strohm: Amateure sterben schnell * 314
21.04 Tagesthemen-Telegramm
21.05 Juhnke & Co.
Comedy Serie 316
21.30 Robot-Reich 317
22.00 Mary 318
22.30■ Tagesthemen 315
23.00 Leben hinter Masken
Spielfilm
Hongkong 1988 319
00.50 Tagesschau
00.55 Z.E.N.
bis 01.00 Uhr
anschließend "Videotext für alle"
Dienstagvormittag auf 321
v : Select
OK : confirm programme

Repeatedly press the button ▼, until the cursor (▮) marks the start time of the desired broadcast.

---

4. Confirming the broadcast

OK


GRUNDIG
TEXT-PROGRAMMING
Timer Prog. Date Start Stop
01 ARD 11.03. 22:30 23:00 V
22.30 ■ Tagesthemen 315
: Archive with title
VPT : ARD – Teletext P. 303
OK : Program Timer
< : Change Programming

The data of the broadcast is adopted by the first memory position (TIMER).

If a »V« appears behind the Stop time, then the TV station transmits the VPS signal and the recorder records under the control of this signal.

Now check, whether all data items (programme, date, start and stop times, VPS signal) are completely and correctly indicated.

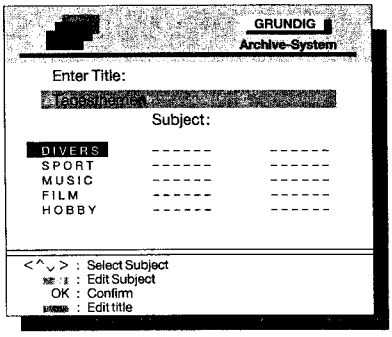
If modifications are necessary, then refer to the chapter "Modifications and Completions" on page 42.

If no modifications are required, then continue with point 5.
If you do not wish to store titles into the archive, then continue with point 8.

---

5. Storing titles into the archive

■ (blue)



The title of the selected broadcast is automatically adopted by the Teletext programme summary.

If you wish to modify the title, then continue with point 6. If no modifications are required, you can allocate the title a subject, refer to point 7.

▶▶

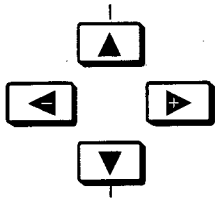
6. Record Programming Variant 2

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations

6. Modifying titles

(blue)

a) Selecting letters/characters

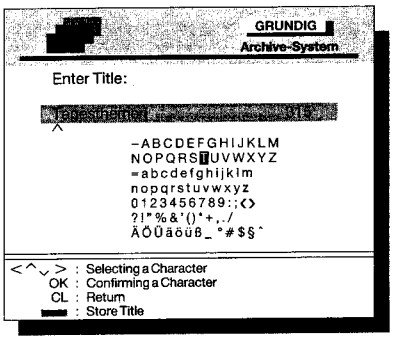


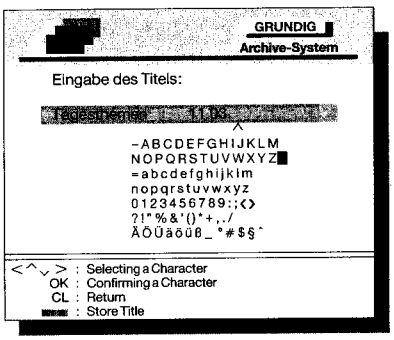
b) Confirming letters/characters

OK

c) Storing titles

(blue)





The title can comprise between 1 to 30 letters/characters.
Select the required letters/characters with the buttons ◄, ►, ▼ or ▲.

A "blank" can be found behind the "Z" in the character set.

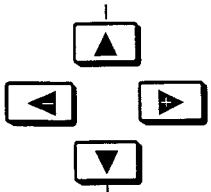
Confirm the letter with the button OK – the cursor (^) jumps one position to the right.
Use the button CL to move the cursor (^)to the left. This permits to overwrite an already confirmed character.

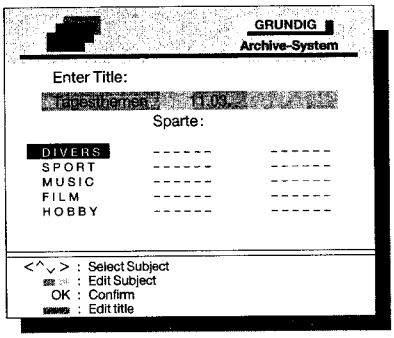
Repeat the above steps for the next letters/characters.

When the entry is completed, the title can be stored in memory.

If a "blank title" is stored, »REC.« will appear as title.

7. Allocating a title a subject





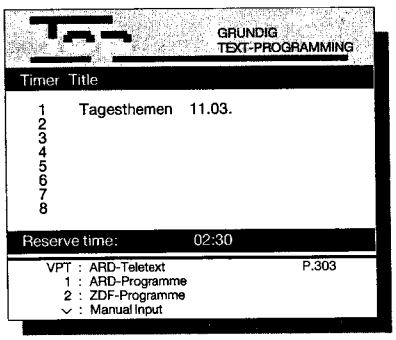
Some subjects are preset at the factory.

Use the buttons ▼, ►, ▲ or ◄ to select the desired subject for the title.

If you require a »new« subject, you can create an own name. For this, refer to chapter "Creating new subjects", pages 81 to 82.

8. Confirming the recording data

OK



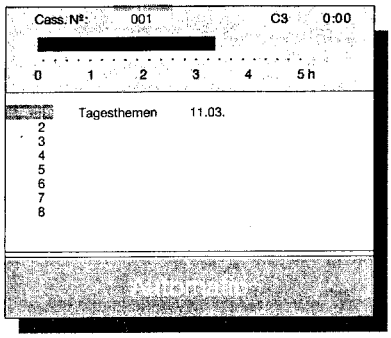
The Text-Programming page shows all TIMER positions. TIMER 1 is occupied.

»Reserve time« informs you about the remaining playing time of the tape.

For programming further broadcasts, select the required Teletext page with the programme summary with the numbered buttons 1 to 9 and repeat the points 3 to 8.

If you wish to programme broadcasts on the programme positions 10 to 29, then press the button ⏻ and repeat the points 1 to 8.

6. Record Programming Variant 2

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations
9. Terminating record programming i i		The recorder is in record standby mode. In the display of the recorder, the data of the TIMER position that will be recorded first is shown. All tape run functions of the recorder are from now on blocked. The recording will be made at the programmed time. If record programming is not terminated with the button [i], the recorder cannot start recording.

Modifications and completions of the recording data

(necessary for the point 4 of the programming example)

Correcting the data

Press once the button [◄], then repeatedly press the button [◄] until the cursor is at the first position of the data field to be corrected.
"Overwrite" this data with the numbered buttons [1], [2] to [9], [0] and confirm the remaining data fields with the button [OK].

Recording without VPS

Press button [◄] and then button [▼].
The cursor jumps to the first figure of the start time.
If the start time and the VPS time differ, enter the start time again with the numbered buttons [1], [2] to [9], [0] and confirm the remaining data fields with the button [OK].

Doubling the recording time of the cassette

Press the button [◄] and then the button [LP].
Additional indication: L.

Recordings with radio sound (parallel dubbing)

Press the button [◄] and then the button [Hi-Fi].
Additional indication: P.

Paging backwards to the same Teletext page

Press the button [VPT].

Possible messages in the dialogue line

If the »Reserve time« is negative (–) and highlighted on red background, then a cassette with insufficient playing time has been loaded, or the sum of all TIMER recording times is too large.

If the message »Record period« and/or »Cass« appears instead of the »Reserve time« indication, then ...
... no cassette has been loaded;
... the cassette is protected against new recording;
... a non-standard hours cassette is loaded.

If a red line with the message »Record Timer Overlap« appears (the corresponding TIMER positions are red highlighted), then the recording times of the TIMER positions overlap each other. In this case, change the data of one TIMER position. For this, select the TIMER position with the button [◄], press once the button [►], then select the data to be modified with the button [►] or [◄], enter the new data, and confrim the data line step by step with the button [OK].

When you are still in the "record programming" mode, then the message »Record beginning soon« will appear ten minutes before the beginning of the recording.

If the message »Record start time has passed« appears, then you must immediately exit the record programming mode so that the recorder can start recording.
For this, press twice the button [i].

►►

6. Record Programming Variant 2

Modifying individual data items of a TIMER position

Select the »Info« page with the button [i].

Call up the »Record programming« page with the numbered button [1].

Select »Manual Input« with button [▼].

Select the respective TIMER position with the button [▼] or [▲], then press the button [▶].
Select the data item to be modifed with the button [▶] or [◀], enter the new data with the numbered buttons [1], [2] to [9], [0], and confirm the data line step by step with the button [OK].

Erasing occupied TIMER positions

Select the »Info« page with the button [i].

Call up the »Record programming« page with the numbered button [1].

Select »Manual Input« with button [▼].

Select the TIMER position to be erased with the button [▼] or [▲], and erase it by pressing the button [CL].
The TIMER position is cleared and can be programmed anew.

Terminating record programming

For this, press twice the button [i].
After a short time, you will see the data of the TIMER position for the first recording.
All tape run functions of the recorder are from now on »blocked«.
At the programmed time, the recorder will automatically start recording.

If the "record programming" mode is not terminated with the button [i], the recorder cannot start the recording.

In the record standby mode and during recording, you can call up a summary of the programmed titles by pressing the button [SI].

On the picture screen of the TV set appears a page showing the cassette number, the playing time, and all programmed titles.
The recording which will be made next is marked blue.
From the record start time on, the programmed recording time is marked by a yellow line.
When this marking line appears in red and ends within the playing time indication, then a recording stored in the archive is partially erased.
When this marking line appears in red and surpasses the playing time indication, then the sum of all programmed recording times is too large.

Interrupting the record standby mode

If you wish to use the recorder (e.g., for playback) when it is in the record standby mode, then

press the button [⏏] on the recorder. The cassette will automatically be ejected,
or

press a longer time the button [⏻] on the remote control handset.
The TIMER data in the display of the recorder disappears, the TIMER indication of the TIMER position for the first programmed recording flashes, and the data remains stored in memory.

The record standby mode of the recorder is now interrupted.

Now select the desired function.

When the function is competed, again insert a cassette with sufficient playing time, wait until the ATTS measurement is completed, and then press the button [⏻] a longer time.
The cassette number will briefly appear in the display of the recorder.
If the indication CASSN?--- appears instead of the cassette number, then you must enter the cassette number if you wish to store the recording into the archive.
For this, enter the cassette number as three digits with the numbered buttons [1], [2] to [9], [0] and confirm the entry with the button [↵].
The recorder now is in the record standby mode again and the TIMER recordings will be made at the programmed times.

6. Record Programming

Variant 3
Record Programming with the Remote Control Handset, Text Programming, and the Teletext Pages Offered by the TV Stations

Preaparations

Switch on the TV set.

Select the AV programme position for video playback on the TV set (serves as control monitor).

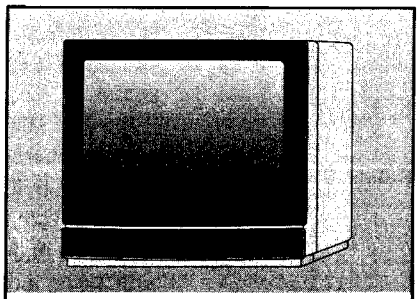
Check the clock time and the date on the recorder.

Load a cassette with sufficient playing time not protected against new recording.

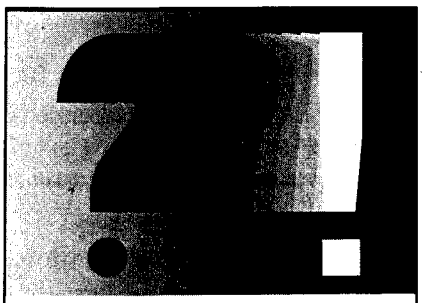
If the indication CASSN?---- appears in the display of the recorder, then you must enter the cassette number as three digits with the numbered buttons [1], [2] to [9], [0] and confirm it with the button [⏎].

Programming example

Press these buttons on the remote control handset



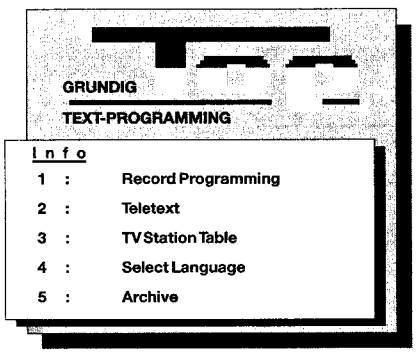
On the picture screen of your TV set appears



Explanations

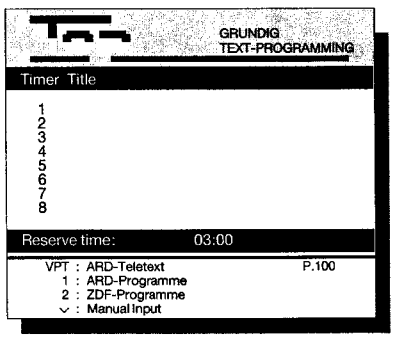
1. Calling up the Info page

[i]



2. Activating record programming

[1]



The dialogue line shows the programme positions 1 and 2 with the station abbreviations.

If you wish to use the Teletext pages of the programme positions 3 to 9 for record programming, then repeatedly press the button [▶].
The programme positions 3 and 4, 5 and 6, etc. appear one after the other along with the station abbreviations in the dialogue line.
Select the Teletext page used last by pressing the button [VPT].

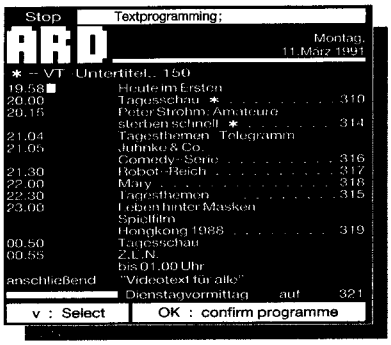
▶▶

6. Record Programming Variant 3

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations

3. Calling up a Teletext page

1



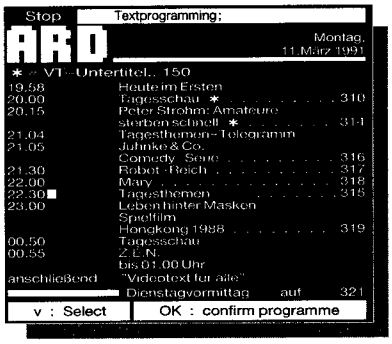
Select the desired Teletext page with one of the numbered buttons 1 to 9. In the example with the numbered button 1 the page 303 of ARD.

On the programme summary, a cursor (▮) appears beside the start time of the first broadcast.

If the cursor does not appear, then press the button OK.

4. Selecting a broadcast

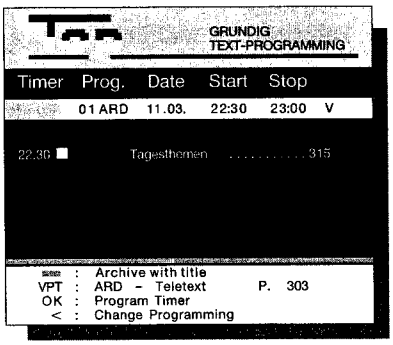
▼ ▼



Repeatedly press the button ▼, until the cursor (▮) marks the start time of the desired broadcast.

5. Confirming the broadcast

OK



The data of the broadcast is acceptedby the first memory position (TIMER).

If a »V« appears behind the Stop time, then the TV station transmits the VPS signal and the recorder records under the control of this signal.

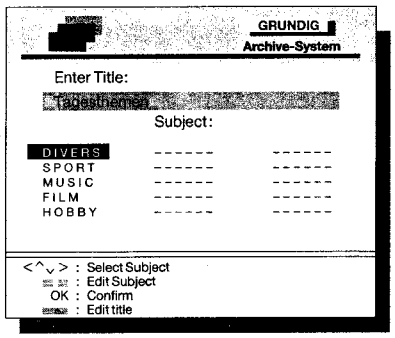
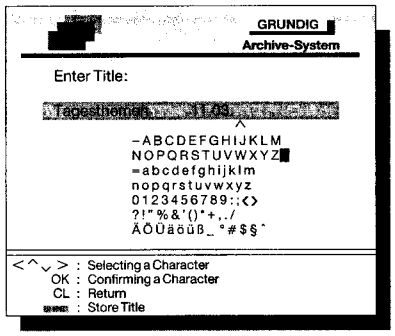
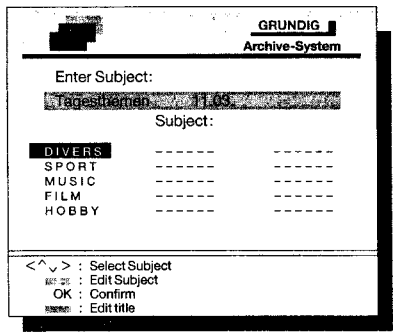
Now check, whether all data items (programme, date, start and stop times, VPS signal) are completely and correctly indicated.

If modifications are necesary, then refer to the chapter "Modifications and Completions" on page 48.

If no modifications are required, then continue with point 6.

If you do not wish to store titles into the archive, then continue with point 9.

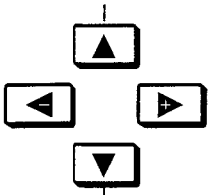
6. Record Programming Variant 3

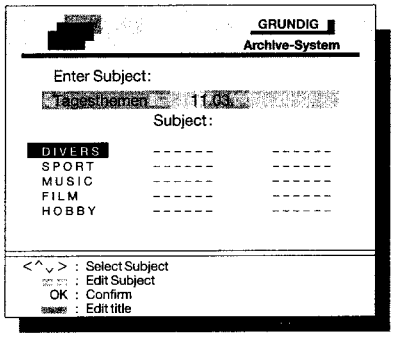
Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations
6. Storing the title of the broadcast into the archive (blue)		The title of the selected broadcast is automatically accepted by the Teletext programme summary. If you wish to modify the title, then continue with point 7. If no modifications are required, you can allocate the title a subject, refer to point 8.
7. Modifying titles (blue)		The title can comprise between 1 to 30 letters/characters. Select the required letters/characters with the buttons ◄, ►, ▼ or ▲. A "blank" can be found behind the "Z" in the character set.
a) Selecting letters/characters ▲ ◄ ► ▼		
b) Confirming letters/caharacters OK		Confirm the letter with the button OK – the cursor (^) jumps one position to the right. Use the button CL to move the cursor (^) to the left. This permits to overwrite an already confirmed character. Repeat the above steps for the next letters/characters.
c) Storing titles (blue)		When the entry is completed, the title can be stored in memory. If a "blank title" is stored, »REC.« will appear as title.

6. Record Programming Variant 3

Press these buttons of the remote control handset	On the picture screen of you TV receiver appears	Explanations

8. Allocating a title a subject





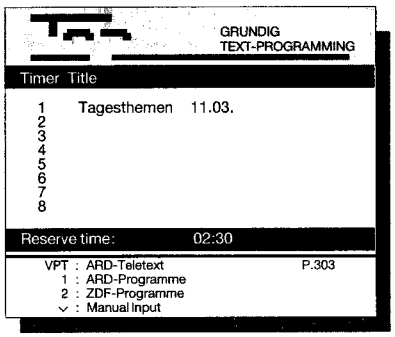
Some subjects are preset at the factory.

Use the buttons ▼, ▶, ▲ or ◀ to select the desired subject for the title.

If you require a "new" subject, you can create an own name for this.
For this, refer to chapter "Creating new subjects", pages 81 to 82.

9. Confirming the recording data

OK



The Text-Programming page shows all TIMER positions, TIMER 1 is occupied.

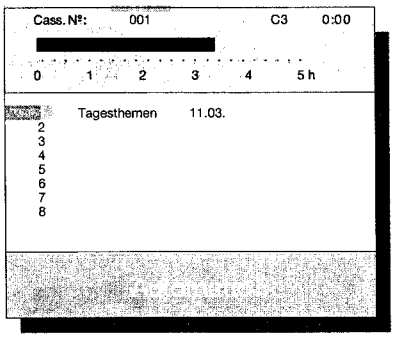
»Reserve time« informs you about the remaining playing time of the tape.

For programming further broadcasts, select the required Teletext page with the programme summary with the numbered buttons 1 to 9 and repeat the points 3 to 8.

10. Terminating record programming

i

i



The recorder is in record standby mode.

In the display of the recorder, the data of the TIMER position that will be recorded first is shown.
All tape run functions of the recorder are from now on blocked.
The recording will be made at the programmed time.

If record programming is not terminated with the button i, the recorder cannot start recording.

Further operating steps and modification possibilities can be found on the next page. ▶▶

6. Record Programming Variant 3

Modifications and completions of the recording data

(necessary for the point 5 of the programming example)

Correcting the data

Press once the button [◄], then repeatedly press the button [◄] until the cursor is at the first position of the data field to be corrected.
"Overwrite" this data with the numbered buttons [1], [2] to [9], [0] and confirm the remaining data fields with the button [OK].

Recording without VPS

Press button [◄] and then button [▼].
The cursor jumps to the first figure of the start time.
If the start time and the VPS time differ, enter the start time again with the numbered buttons [1], [2] to [9], [0] and confirm the remaining data fields with the button [OK].

Doubling the recording time of the cassette

Press the button [◄] and then the button [LP].
Additional indication: L.

Recordings with radio sound (parallel dubbing)

Press the button [◄] and then the button [Hi-Fi].
Additional indication: P.

Paging backwards to the same Teletext page

Press the button [VPT].

Possible messages in the dialogue line

If the »Reserve time« is negative (–) and highlighted on red background, then a cassette with insufficient playing time has been loaded, or the sum of all TIMER recording times is too large.

If the message »Record period« and/or »Cass« appears instead of the »Reserve time« indication, then...
... no cassette has been loaded;
... the cassette is protected against new recording;
... a non-standard hours cassette is loaded.

If a red line with the message »Record Timer Overlap« appears (the corresponding TIMER positions are red highlighted), then the recording times of the TIMER positions overlap each other.
In this case, change the data of one TIMER position. For this, select the TIMER position with the button [▼], press once the button [►], then select the data to be modified with the button [►] or [◄], enter the new data, and confirm the data line step by step with the button [OK].

When you are still in the »record programming« mode, then the message »Record beginning soon« will appear ten minutes before the beginning of the recording.

If the message »Record start time has passed« appears, then you must immediately exit the record programming mode so that the recorder can start recording.
For this, press twice the button [i].

Modifying individual data items of a TIMER position

Select the »Info« page with the button [i].

Call up the »Record programming« page with the numbered button [1].

Select »Manual Input« with button [▼].

Select the respective TIMER position with the button [▼] or [▲], then press the button [►].
Select the data item to be modifed with the button [►] or [◄], enter the new data with the numbered buttons [1], [2] to [9], [0], and cofirm the data line step by step with the button [OK].

Erasing occupied TIMER positions

Select the »Info« page with the button [i].

Call up the »Record programming« page with the numbered button [1].

Select »Manual Input« with button [▼].

Select the TIMER position to be erased with the button [▼] or [▲] and erase it by pressing the button [CL].
The TIMER position is cleared and can be programmed anew.

▶▶

6. Record Programming Variant 3

Terminating record programming

For this, press twice the button [i].
After a short time, you will see the data of the TIMER position for the first recording.
All tape run functions of the recorder are from now on "blocked".
At the programmed time, the recorder will automatically start recording.

If the »record programming« mode is not terminated with the button [i], the recorder cannot start the recording.

In the record standby mode and during recording, you can call up a summary of the programmed titles by pressing the button [TEXT].

On the picture screen of the TV set appears a page showing the cassette number, the playing time, and all programmed titles.
The recording which will be made next is marked blue.
From the record start time on, the programmed recording time is marked by a yellow line.
When this marking line appears in red and ends within the playing time indication, then a recording stored in the archive is partially erased.
When this marking line appears in red and surpasses the playing time indication, then the sum of all programmed recording times is too large.

Interrupting the record standby mode

If you wish to use the recorder (e.g., for playback) when it is in the record standby mode, then

press the button [▲] on the recorder. The cassette will automatically be ejected,
or

press a longer time the button [⏻] on the remote control handset.
The TIMER data in the display of the recorder disappears, the TIMER indication of the TIMER position for the first programmed recording flashes, and the data remains stored in memory.

The record standby mode of the recorder is now interrupted.

Now select the desired function.

When the function is completed, again insert a cassette with sufficient playing time, wait until the ATTS measurement is completed, and then press the button [⏻] a longer time.

The cassette number will briefly appear in the display of the recorder.
If the indication CASS№--- appears instead of the cassette number, then you must enter the cassette number if you wish to store the recording into the archive.
For this, enter the cassette number as three digits with the numbered buttons [1], [2] to [9], [0] and confirm the entry with the button [OK].
The recorder now is in the record standby mode again and the TIMER recordings will be made at the programmed times.

6. Record Programming

Variant 4
Record Programming with the Remote Control Handset, Text Programming, and by Manual Data Entry

Preparations

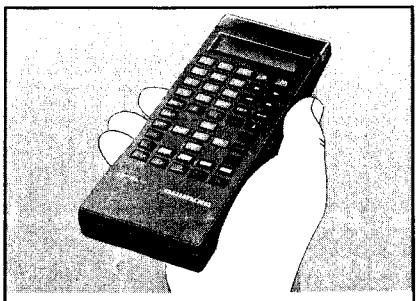
Switch on the TV set.

Select the AV programme position for video playback on the TV set (serves as control monitor).

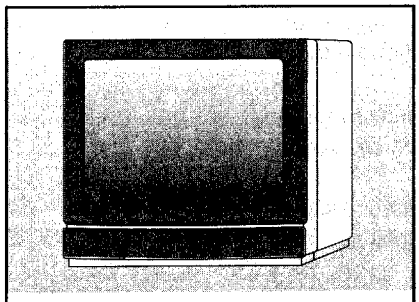
Load a cassette with sufficient playing time not protected against new recording.

If the indication CASSN° ---- appears in the display of the recorder, then you must enter the cassette number as three digits with the numbered buttons [1], [2] to [9], [0] and confirm it with the button [⏏].

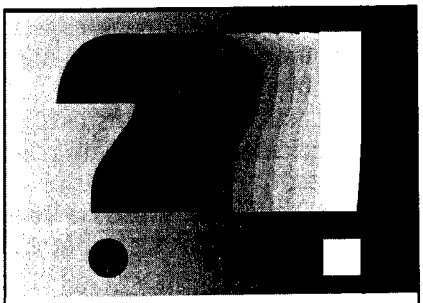
Programming example



Press these buttons on the remote control handset



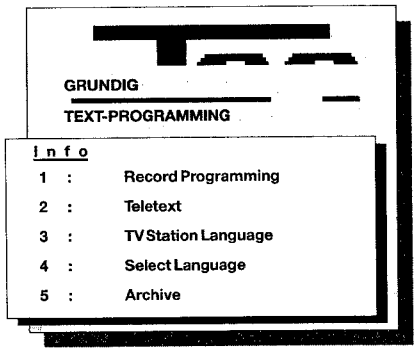
On the picture screen of your TV set appears



Explanations

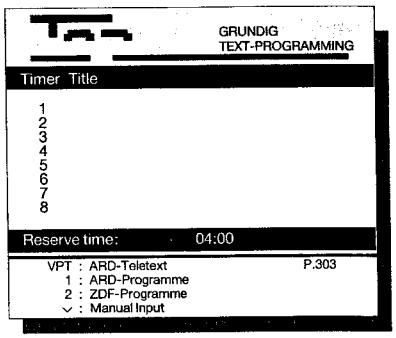
1. Calling up the Info page

[i]



2. Activating record programming

[1]



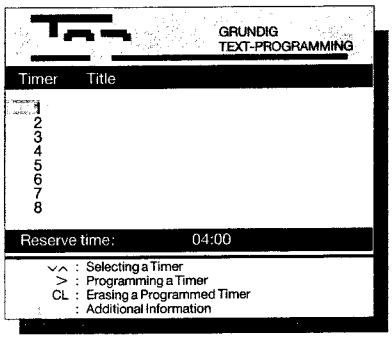
▶▶

6. Record Programming Variant 4

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations

3. Selecting manual entry

▼

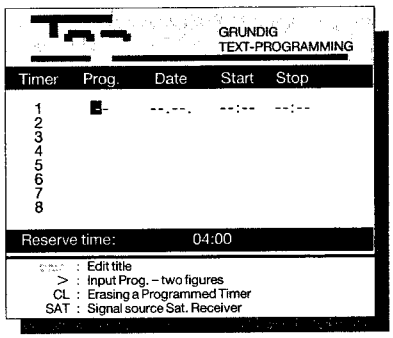


A blue cursor (▮) marks the TIMER position 1.

If the first TIMER position is occupied, select the next one with button ▼ or ▲.

4. Activating TIMER positions

▶



Horizontal dashes appear in the selected TIMER position, the first position of Prog. (programme) is marked by a black cursor (▮).

Wrong entries (e.g., 32.05 = wrong date) are rejected.
The cursor jumps to the first position of the data field. Repeat the entry.

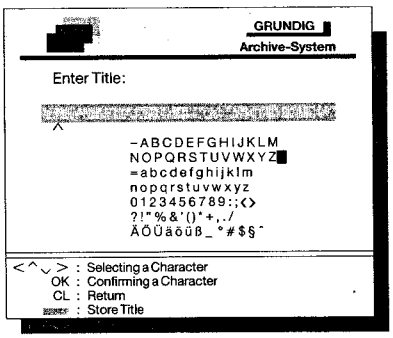
If corrections to the entries made in points 7 to 11 are required, use the button ◀ or ▶ to move the cursor to the desired position and then enter the new data.

5. Entering the title of a broadcast

■ (blue)

a) Selecting letters/characters

▲ ◀ ▶ ▼



If you do not wish to store the title into the archive, then continue with point 7
The title can consist of 1 to 30 letters/characters.

Select the required letter/character with the buttons ◀, ▶, ▼ or ▲.
Confirm the letter with the button OK — the cursor (^) jumps one position to the right.

Use the button CL to move the cursor (^) to the left. This permits to overwrite an already confirmed character.

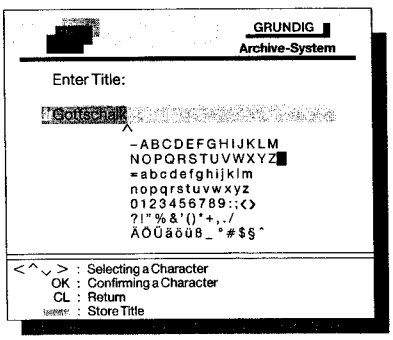
Repeat the above steps for the next letters/characters.

When the entry is completed, the title can be stored in memory.

If a "blank title" is stored, »REC.« will appear as title.

b) Confirming letters/characters

OK



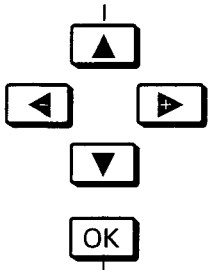
c) Storing titles

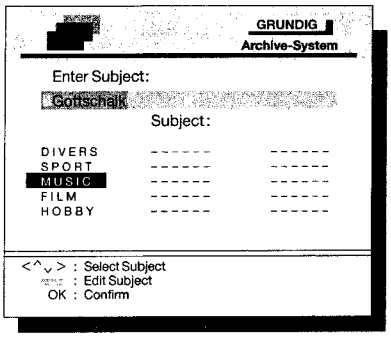
■ (blue)

6. Record Programming Variant 4

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations

6. Allocating a title a subject





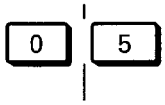
Use the buttons ▼, ▶, ▲ or ◀ to select the desired subject for the title and confirm with button OK.

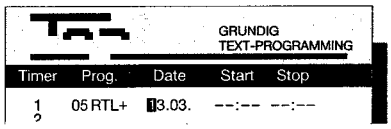
If you require a "new" subject, you can create an own name for this.
For this, refer to chapter "Creating new subjects", pages 81 to 82.

7. Selecting a programme source

Select the programme source out of the possibilities 7a to 7d.

a) TV programme

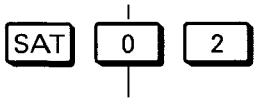


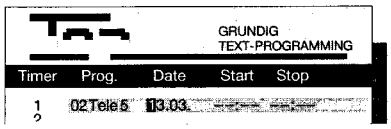


Select the desired TV programme as two digits (e.g., 0 and 2 for the 2nd Programme) with the numbered buttons 1, 2 to 9, 0.

or

b) Satellite programme



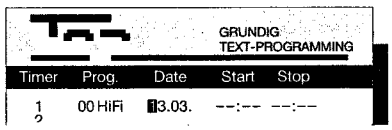


Enter the desired satellite programme as two digits with the numbered buttons 1, 2 to 9, 0.
The data line for satellite programmes is high-lighted on blue background.
»SAT« appears in the Info line.

To the socket ⊖ EURO-AV ⊖ and the universal socket (on the back of the recorder), an appropriate GRUNDIG satellite receiver must be connected.

or

c) HiFi programme

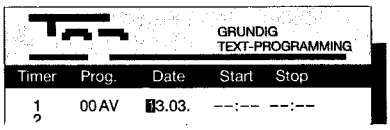


For sound recordings, no programme entry is required.

An appropriate stereo unit must be connected to the socket AUDIO ⊖ R L (on the back of the recorder).

or

d) AV programme



An AV programme is the video/audio signal of a unit connected to the socket ⊖ EURO-AV ⊖.

▶▶

6. Record Programming Variant 4

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations

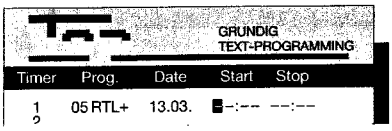
8. Confirming or entering the date

Choose between the possibilities 8a to 8d.

a) Confirming the current date

[OK]

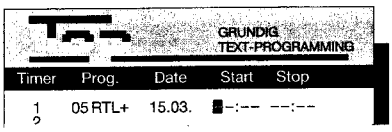
or



For recordings on the same day.

b) Entering the desired date

[1] [5] [0] [3]



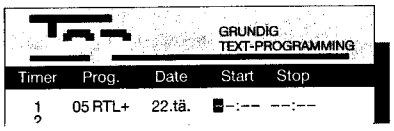
For recordings on different days.

Enter the desired date as four figrues (day and month) – in the example the 15th March with the numbered buttons [1] [5] [0] [3].

or

c) Selecting the every-day function

[2] [0] [▲]



For daily recordings at the same time.

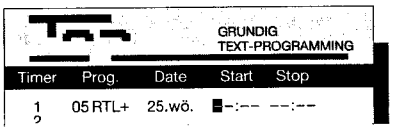
Enter the day of the date as two figures with the numbered buttons [1], [2] to [9], [0], then press the button [▲].

Indication: day number and »tä«. (= daily).
From the selected day on, the broadcast will daily be recorded.
The function ends when the tape end is reached.

or

d) Selecting the every-week function

[2] [5] [▼]



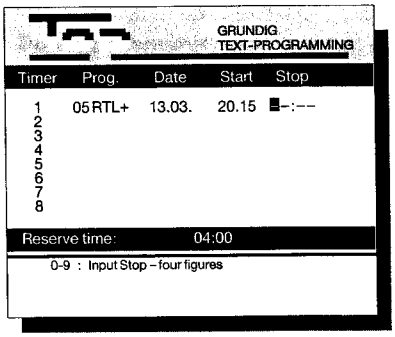
For weekly recordings at the same time.

Enter the day of the date as two figures with the numbered buttons [1], [2] to [9], [0], then press the button [▼].

- Indication: day number and »wö« (weekly).
- From the selected day on, the broadcast will weekly be recorded.
  The function ends when the tape end is reached.

9. Entering the start time

[2] [0] [1] [5]



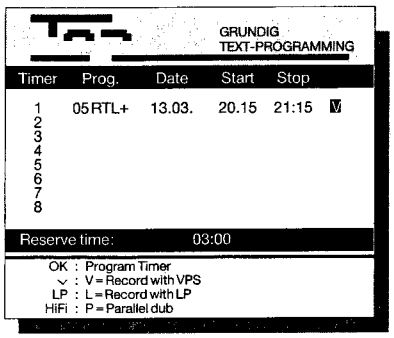
Enter the desired start time (= beginning of broadcast) as four figures – in our example 20:15 hours – with the numbered buttons [2] [0] [1] [5].

6. Record Programming Variant 4

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations

10. Entering the stop time

2 1 1 5



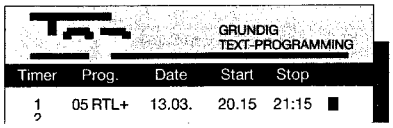
Enter the desired stop time (= end of broadcast) as four figures – 21:15 hours in the example – with the numbered buttons 2 1 1 5.

11. Further functions

These functions can additionally be selected. If they are not required continue with point 12.

a) Clearing VPS

▼



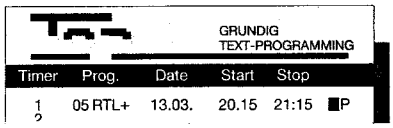
If broadcasts are to be programmed without VPS control.

No function on hifi programming.

or

b) Selecting parallel dubbing

Hi-Fi



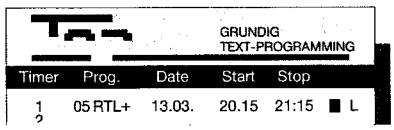
If radio sound is to be added to the TV picture.

No function on hifi or AV programming.

or

c) Selecting longplay mode

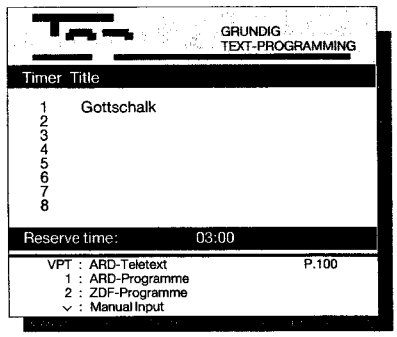
LP



If you wish to double the recording time of the cassette.

12. Confirming the recording data

OK



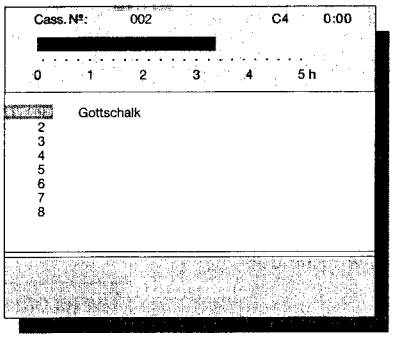
The Text-Programming page shows all TIMER positions, TIMER 1 is occupied.

»Reserve time« informs you about the remaining playing time of the tape.
(Not with daily or weekly recordings at the same time).

Following this example, you can programme the remaining TIMER positions.

If modifications are required, then refer to the chapters on page 56.
If not, terminate record programming with point 13.

6. Record Programming Variant 4

Press these buttons of the remote control handset	On the picture screen of your TV receiver appears	Explanations
13. Terminating record programming i i		The recorder is in record standby mode. In the display of the recorder, the data of the TIMER position that will be recorded first is shown. All tape run functions of the recorder are from now on blocked. The recording will be made at the programmed time. If record programming is not terminated with the button [i], the recorder cannot start recording.

Possible message in the dialogue line

If the »Reserve time« is negative (–) and highlighted on red background, then a cassette with insufficient playing time has been loaded, or the sum of all TIMER recording times is too large.

If the message »Record period« and/or »Cass« appears instead of the »Reserve time« indication, then...
... no cassette has been loaded;
... the cassette is protected against new recording;
... a non-standard hours cassette is loaded.

If a red line with message »Record Timer Overlap« appears (the corresponding TIMER positions are red highlighted), then the recording time of the TIMER positions overlap each other.
In this case, change the data of one TIMER position. For this, select the TIMER position with the button [▼], press once the button [►], then select the data te be modified with the button [►] or [◄], enter the new data, and confirm the data line step by step with the button [OK].

When you are still in the »record programming« mode, then the message »Record beginning soon« will appear ten minutes before the beginning of the recording.

If the message »Record start time has passed« appears, then you must immediately exit the record programming mode so that the recorder can start recording.
For this, press twice the button [i].

6. Record Programming Variant 4

Modifying individual data items of a TIMER position

Select the »Info« page with the button [i].

Call up the »Record programming« page with the numbered button [1].

Select »Manual Input« with button [▼].

Select the respective TIMER position with the button [▼] or [▲], then press the button [▶].
Select the data item to be modifed with the button [▶] or [◀], enter the new data with the numbered buttons [1], [2] to [9], [0], and confirm the data line step by step with the button [OK].

Erasing occupied TIMER positions

Select the »Info« page with the button [i].

Call up the »Record programming« page with the numbered button [1].

Select »Manual Input« with button [▼].

Select the TIMER position to be erased with the button [▼] or [▲], and erase it by pressing the button [CL].
The TIMER position is cleared and can be programmed anew.

Terminating record programming

For this, press twice the button [i].
After a short time, you will see the data of the TIMER position for the first recording.
All tape run functions of the recorder are from now on »blocked«.
At the programmed time, the recorder will automatically start recording.

If the "record programming" mode is not terminated with the button [i], the recorder cannot start the recording.

In the record standby mode and during recording, you can call up a summary of the programmed titles by pressing the button [▤].

On the picture screen of the TV set appears a page showing the cassette number, the playing time, and all programmed titles.
The recording which will be made next is marked blue.
From the record start time on, the programmed recording time is marked by a yellow line.
When this marking line appears in red and ends within the playing time indication, then a recording stored in the archive is partially erased.
When this marking line appears in red and surpasses the playing time indication, then the sum of all programmed recording times is too large.

Interrupting the record standby mode

If you wish to use the recorder (e.g., for playback) when it is in the record standby mode, then

press the button [▲] on the recorder. The cassette will automatically be ejected,
or

press a longer time the button [⏻] on the remote control handset.
The TIMER data in the display of the recorder disappears, and the TIMER indication of the TIMER position for the first programmed recording flashes.

The record standby mode of the recorder is now interrupted.

Now select the desired function.

When the function is completed, again insert a cassette with sufficient playing time, wait until the ATTS measurement is completed, and then press the button [⏻] a longer time.
The cassette number will briefly appear in the display of the recorder.
If the indication CASSN?=== appears instead of the cassette number, then you must enter the cassette number if you wish to store the recording into the archive.
For this, enter the cassette number as three digits with the numbered buttons [1], [2] to [9], [0] and confirm the entry with the button [▤].
The recorder now is in the record standby mode again and the TIMER recordings will be made at the programmed times.

6. Record Programming

VPS – The Video Programme System

When making Timer recordings (record programming), control through the VPS system always makes sure that the desired programme is completely recorded.

Wrong recordings due to programme shifts thus are no longer possible.

Hints for recording with the VPS system

Many TV stations are transmitting an additional signal (VPS signal) which marks the beginning and the duration of each television broadcast.

It is therefore very important that you enter the switch-on and switch-off times exactly to the minute when programming your video recorder.

Example:

Beginning of the broadcast: 20.15 hours
End of the broadcast: 21.45 hours
Entries to be made on record programming: [2] [0] [1] [5] and [2] [1] [4] [5].

If television broadcasts might possibly be changed or shifted, then separate VPS times are given in the programme guides, which then must be entered instead of the normal start times of these broadcasts.

Example:

Beginning of the broadcast: 20.15 hours (VPS 20.30 hours)
End of the broadcast: 21.45 hours
Entries to be made on record programming: [2] [0] [3] [0] and [2] [1] [4] [5].

In this case, the recorder will recognize the time shift and switch on only at the actual beginning and switch off at the actual end of the broadcast.

Record programming for several broadcasts on the same day

If you wish to programme recording of several broadcasts on different programme positions during the same day, then you must decide which broadcast you wish to record completey if time shifts should occur.

Example:

You wish to record a broadcast on the First Programme from 20.15 to 21.45 hours and a broadcast on the Second Programme from 21.50 to 22.30 hours.
If now the broadcast on the First Programme lasts 15 minutes longer than intended, then control by the VPS signal will cause that your recorder will record this broadcast up to 22.00 hours. Only then the recorder will switch to the Second Programme and you will thus miss 10 minutes of the second broadcast.

If you wish that the broadcast on the Second Programme be recorded from its beginning on, then you must erase the VPS signal when programming recording of the broadcast on the First Programme. The duration of this recording will then be determined by the entered switch-on and switch-off times.

Recording of the First Programme then will end at 21.45 hours, and from 21.45 hours on the Second Programme will be recorded.

Record programming for all evening broadcasts of the same programme on the same day

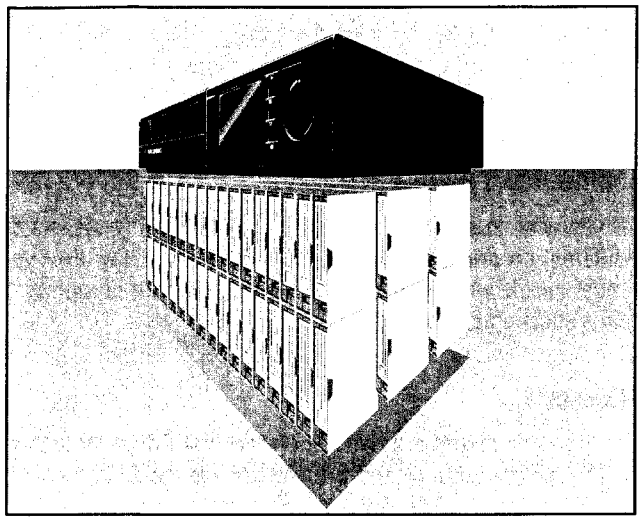
If you wish to record all evening broadcasts (e.g., on saturday from 20.15 hours on an entertainement show, the winning Lotto numbers, and a film) on the same programme (e.g., ARD), then you must use a separate TIMER position for each of these broadcasts if you wish to use the VPS system. Otherwise, control through the VPS signal would cause that recording be terminated at the end of the first broadcast.

If you wish to record all evening broadcasts (e.g., from 20.15 to 00.15 hours) with only one TIMER position, then you must erase the VPS signal when programming.

For confirming or erasing the VPS signal, please refer to the individual programming examples.

With TV stations which do not transmit the VPS signal, recording will be started and ended by the entered switch-on and switch-off times only.

7. The Archive System



The GRUNDIG archive system is an electronic notebook.

With the basic version of this system, you can store in memory up to 700 titles with a lot of information. The archive system can be extended so that it can store up to 1400 titles. For further details, please consult your specialized dealer.

When you are working with the archive system, the word ARCHIVE is shown in the display of the recorder.

So that you can use the archive system to its full extent, please observe the following hints:

1. Automatic archiving (storing into the archive)
Precondition for the automatic storing of your recordings into the archive is that the total playing time and the number of the cassette are correctly recognized by, or have been entered into the recorder. For this reason, always check this data before making any recording or using the record programming functions. For this, press the button [▭].

In the display of the recorder appears for example
a) C3 0:20 = total playing time and elapsed playing time.
Nº 100 = cassette number.

Now the recorder is ready for automatic archiving of your recordings.

b) C3 ---- = total playing time.
CASS Nº = prompt to enter the cassette number.

Enter the cassette number with the numbered buttons [1], [2] to [9], [0] as three figures (e.g., [1] [0] [0]) and confirm the entry with the button [▭].
The indication a) will briefly appear in the display.
The recorder is ready for automatic storing of your recordings into the archive (automatic archiving).

c) ----
CASS Nº = prompt to enter the cassette number.

Enter the cassette number with the numbered buttons [1], [2] to [9], [0] as three figures (e.g., [1] [0] [0]) and confirm the entry with the button [▭]. If the cassette is already stored in the archive, the indication a) will appear. If a new number is entered, the following indication will appear:

E ---- = prompt to enter the total playing time.
Nº 100 = cassette number.

Enter the total playing time as three figures (in minutes) with the numbered buttons [1], [2] to [9], [0] and confirm the entry with the button [OK].
The indication a) will briefly appear.
The recorder is ready for the automatic storing of your recordings into the archive.

2. The cassette number
In the archive the cassettes are ordered by numbers.
On own recordings which are automatically stored into the archive, the cassette number is recorded onto the tape. After the automatic tape time measurement (ATTS), the total playing time, the elapsed playing time, and the number of the loaded cassette will appear in the display. On the picture screen of your TV set appears a table with the contents of the cassette.

For recordings which are stored later in the archive (rearchiving), you must enter the number of the cassette yourselves. Enter the cassette number as three figures with the numbered buttons [1], [2] to [9], [0] and confirm the entry with the button [▭].
Mark all cassettes with the numbers entered into the archive.

This will help you later to find the cassette enquired by the recorder when using the "Goto Title" function.

3. Record programming
For record programming with Teletext stations, preferably use the variant 2 for the programme positions 1 to 29, and the variant 3 for all other programme positions.
In the case of TV stations without Teletext, it is possible to immediately enter the title and subject using the variant 4.
When making a new recording, the recorder will automatically update the already existing data of this cassette in the archive. In this way, your archive will always be kept up to date.

4. Title and subject
For better clarity and to quickly find any desired title, you can classify your recordings into 15 different subjects. For 14 subjects, you can assign names of your choice. When an entry is existing under a subject, this subject cannot be changed any longer.
The subject »DIVERS« is reserved for immediate recordings and for recordings the titles of which are not stored into the archive. On such recordings, the station abbreviation and the start time is stored as title into the archive.

5. Calling up the cassette contents
You can display the contents (titles) of the cassette loaded into the recorder by pressing the button [▭].

7. The Archive System All Possibilities at a Glance

The following table shows all possibilities offered by the archive system.

The possibilities	on the pages	Advantages	Restrictions
Automatic storing the titles of new broadcasts into the archive (automatic archiving).	39 to 43 and 44 to 49	Titles and data are accepted by the archive from the Teletext pages of the TV stations. Titles and subjects can be modified later.	Only possible with TV stations which are operating with Teletext.
Storing the titles or new broadcasts at a later date (re-archiving)	69 to 71	Works with all immediate and TIMER recordings – also with TV stations operating without Teletext	
Storing the titles and the data of your cassettes into the archive ... ... automatically	60 to 63	The archive automatically lists all previous recordigns. The start/stop points of the tape and the date of storage are automatically adopted. Titles can later be entered and allocated to subjects.	Only possible with recordings made on video recorders with VISS system (this system sets automatically "marks" before each recording).
... manually	64 to 68	You can enter the data for your previous recordings into the archive.	
Informing about the cassette contents.	69 to 72	Fast information about the contents of cassettes stored in the archive, e.g., titles, additional information, and selection of titles for playback.	The cassette must be stored in the archive.
Searching titles according to subjects and/or keywords.	73 to 77	Enter the title, keyword or subject – the recorder shows after some instants the search word and the cassette number.	The cassette must be stored in the archive.
Free recording capacity.	78 to 79	You "ask" the archive, how much "space" for recordings is still available on the cassette.	The cassette must be stored in the archive.
"Paging" the archive.	80	Information about the full contents of the archive.	
Creating a new subject.	81 to 82	For an optimum classification of the titles, you can enter subject names of your choice.	The subject »DIVERS« cannot be modified. Subjects to which titles have already been assigned cannot be modified.
Chaning cassette numbers.	82		

7. The Archive System

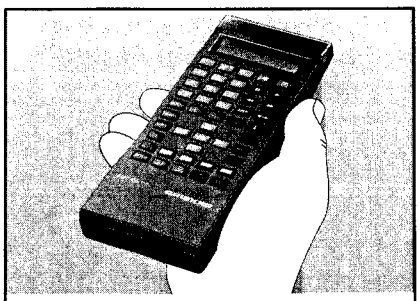
Automatic Re-Archiving

With this function, you can enter all recordings of your cassette collection into the archive. Precondition for this is that the recordings were made on video recorders which are automatically setting marks before each recording (VISS system = Video Index Search System).
Grundig video recorders are provided with this system since the model VS 620.

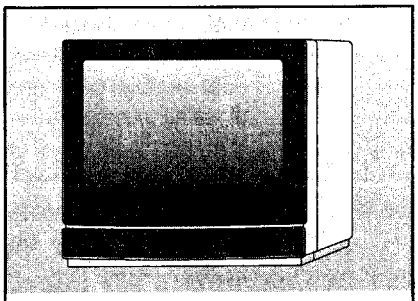
Preparations

Switch on the TV set.

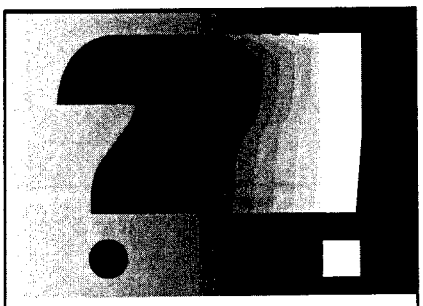
Select the AV programme position for video playback on the TV set.



Press these buttons on the remote control handset

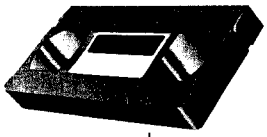


On the picture screen of your TV set appears



Explanations

1. Inserting a cassette



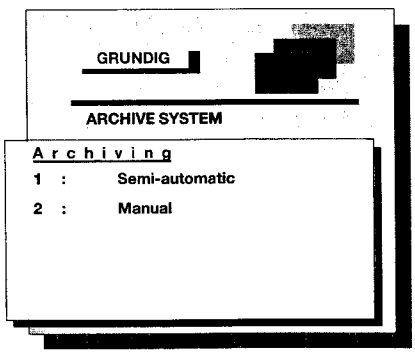
On the recorder appears the indication:

C3 ----
CASSNo

If a non-standard hours cassette is loaded, you must enter the total playing time of the cassette with the numbered buttons [1], [2] to [9], [0] and confirm with the [OK] button (e.g., [2] [1] [0] for a cassette with 210 minutes playing time).
This entry is also required when using a 5-hours cassette E 300.

2. Selecting a function

[i]
[5]
[5]

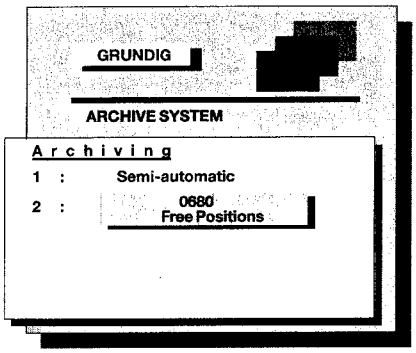


▶▶

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

3. Selecting automatic re-archiving

1



A message like »0680 Free Positions« appears briefly in the table.

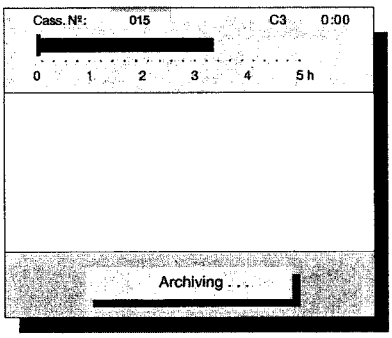
This means, that 680 positions for archiving titles are available.

4. Entering the cassette number

0 1 5

Enter the cassette number as 3 figures with the numbered buttons 1, 2 to 9, 0, e.g., 0 1 5 for the number 15.
If this number is already used, the message »Number allocated« will appear.

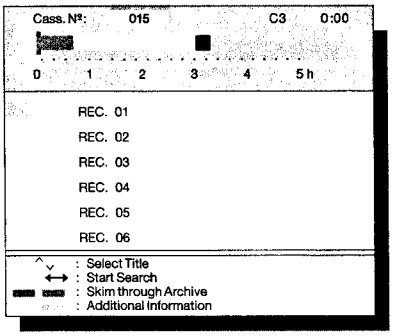
If you have loaded a non-standard hours cassette, the message »Enter playing time« will appear and the recorder automatically switches off the Info table.
Re-start with point 1 of this chapter.



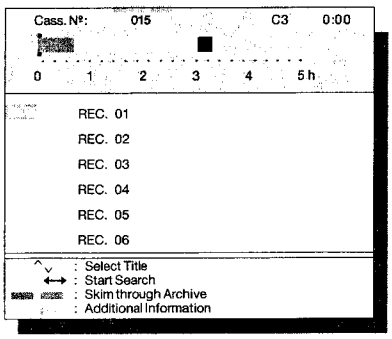
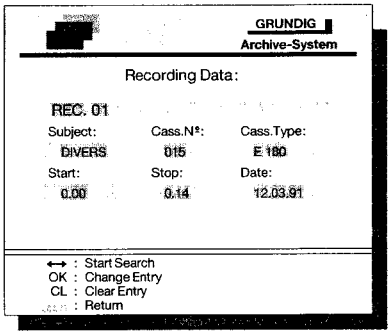
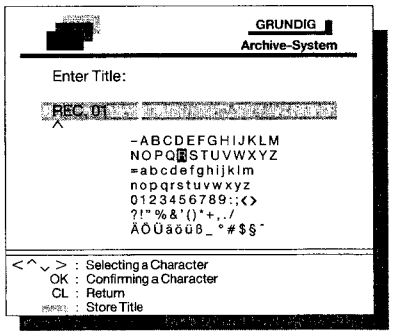
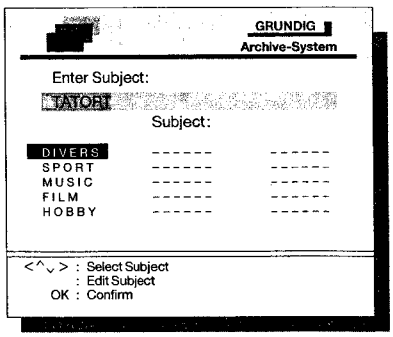
The recorder winds the tape to its beginning and then automatically searchs for recordings (VISS marks) on the tape.
All recordings are indicated on the table.
The mark on the bar shows the current tape position.

On cassettes without VISS marks, a message like »Cass. N° 015 No Entry« will appear.

For re-archiving such cassettes, please use the function "Manual Re-Archiving", page 64.



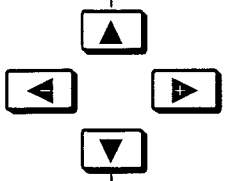
At the end of the tape, the recorder rewinds the tape to its beginning. Now you can enter titles of your choice for the recordings.

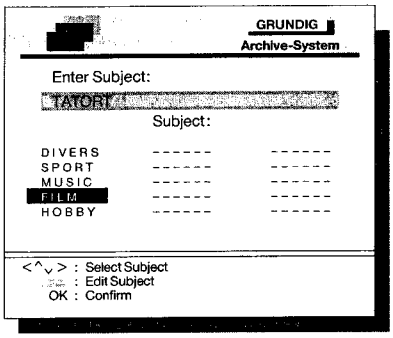
Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations
5. Selecting a title a) step by step ▼ ▲ b) to further titles ▶		With the buttons ■ (red) and ■ (green) you can select further titles (see page 80, chapter "Paging the Archive"). If the recorder has found more than 6 titles, these will be listed on the next table.
6. Entering data for the titles ■ (blue)		Important data for finding the recordings at a later date are the title and the subject.
7. Entering titles OK a) Selecting letters/characters ▲ ◀ ▶ ▼		For each title, from 1 to 30 letters/characters can be entered. Select the required letters/characters with the buttons ◀, ▶, ▼ or ▲. A blank can be found behind the "Z" in the character set.
b) Confirming the letters/characters OK		Confirm the entered letter/character with the button OK – the cursor (^) jumps one position to the right. Use the button CL to move the cursor (^) to the left. This permits to overwrite an already confirmed character. Repeat the steps for the next letters/characters.
c) Storing a title ■ (blue)		When the entry of the title is completed, this can be stored in memroy. If a "Blank Title" is stored, »REC.« will appear as title.

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

8. Allocating a title a subject

a) Selecting a subject

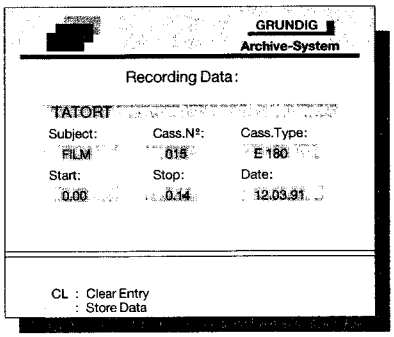




Select the desired subject with the buttons ▼, ▲, ▶ or ◀.

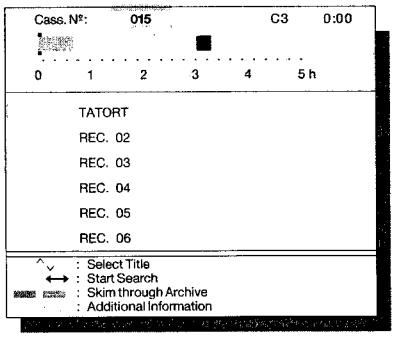
If a "new" subject is required, you can enter a name of your choice.
For this, refer to page 81, chapter "Creating a new subject".

b) Confirming a subject



9. Storing the data of a title

(blue)



The name of the new title appears on the table.

Following this example, you can enter titles for all recordings. For this, start with point 5 of this chapter.

10. Terminating re-archiving

7. The Archive System

Manual Re-Archiving

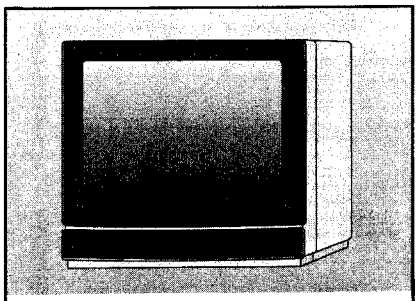
With this function, you can enter all recordings of your cassette collection into the archive.
Use this "Manual Re-Archiving" function for recordings made on video recorders without VISS system.

Preparations

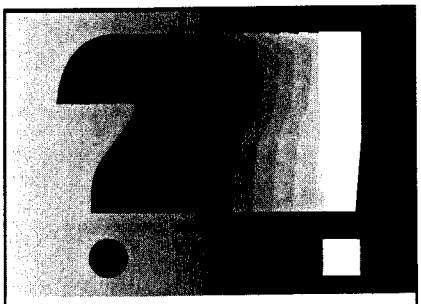
Switch on the TV set.

Select the AV programme position for video playback on the TV set.

Press these buttons on the remote control handset

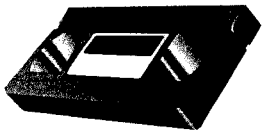


On the picture screen of your TV set appears



Explanations

1. Insert a cassette



The following indication appears on the recorder:

CASSN°

The cassette number must only be entered in the operating step 6.

If a non-standard hours cassette is loaded, you must enter the total playing time of the cassette with the numbered buttons [1], [2] to [9], [0] and confirm with the [OK] button (e.g., [2] [1] [0] for a cassette with 210 minutes playing time).
This entry is also required when using a 5-hours cassette E300.

2. Checking the playing time (beginning and end) of each recording

a) Entering the tape position

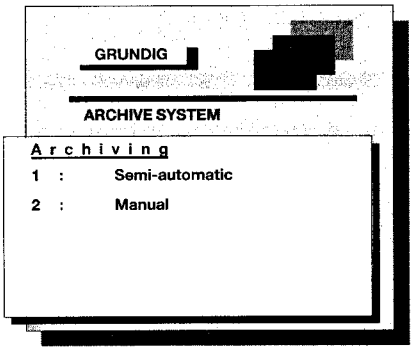
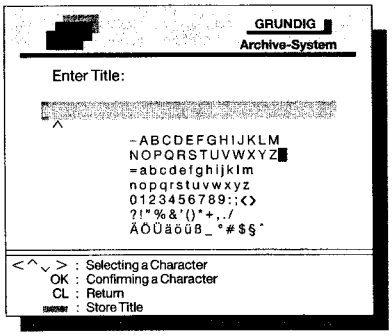
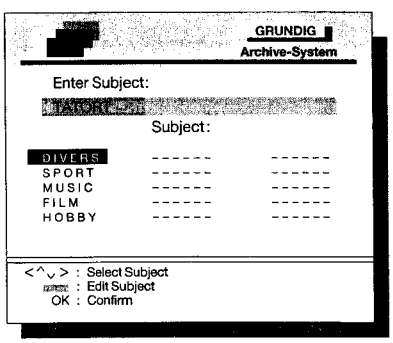
[0] [4] [5]

As there may be minor differences of the playing time indications on different video recorders, we recommend to compare the playing time data of your notebook with the beginning and end of the recordings concerned.

This can quickly be performed with the search function of your recorder.

Enter the tape position as three figures with the numbered buttons [1], [2] to [9], [0] – in our example the tape position 45 minutes with the buttons [0] [4] [5].

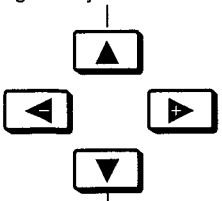
▶▶

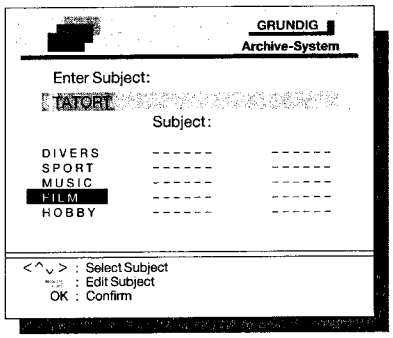
Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations
b) Starting the search function ↔		The recorder winds the tape to the selected position and then switches automatically to playback.
c) Terminating playback ⏻		Now check whether the beginning or the end of the recording is shown on the picture screen. If this is the case, these times can be entered into the archive system (see points 8 and 9).
		If the beginning/end of the recording is not yet reached, search the tape position with the picture search function (button ◀◀ or ▶▶) and enter the playing time shown in the display of the recorder into the archive (see points 8 and 9).
		Repeat this check for all following recordings.
3. Selecting manual re-archiving		
i		
5		
5		
2		
4. Entering titles		
a) Selecting letters/characters		For each title, from 1 to 30 letters/characters can be entered.
▲ ◀ ▶ ▼		Select the required letters/characters with the buttons ◀, ▶, ▼ or ▲.
		A blank can be found behind the "Z" in the character set.
		Confirm the entered letter/character with the button OK – the cursor (^) jumps one position to the right.
		Use the button CL to move the cursor (^) to the left.
		Repeat the steps for the next letters/characters.
b) Confirming the letters/characters		When the entry of the title is completed, this can be stored in memory.
OK		
c) Storing a title		If a "Blank Title" is stored, »REC.« will appear as title.
■ (blue)		

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

5. Allocating a title a subject

a) Selecting a subject



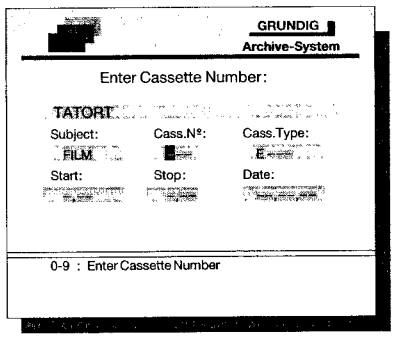


Select the desired subject with the buttons ▼, ▲, ◀ or ▶.

If a "new" subject is required, you can enter a name of your choice.
For this, refer to page 81, chapter "Creating a new subject".

b) Confirming a subject

OK

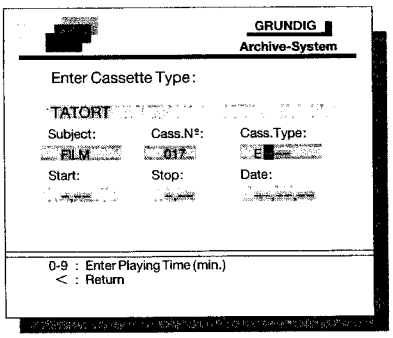


The cursor (▮) jumps to the first positions of the cassette number.

---

6. Entering Number

0 1 7



Enter the cassette number as three figures with the numbered buttons 1, 2 to 9, 0, e.g., 0 1 7 for the cassette number 17.

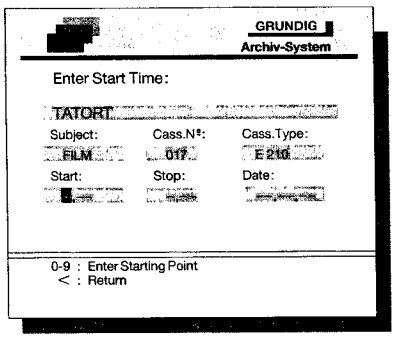
The cursor (▮) jumps to the first position of the cassette type.

If there are already titles archived under this cassette number, the archive adopts the total playing time and the last stopping point as starting point for the new entry.
The cursor (▮) jumps to the first position of »Stop«. Continue with point 9.

---

7. Entering the cassette type

2 1 0



Enter the cassette type as 3 figures with the numbered buttons 1, 2 to 9, 0 – e.g., 2 1 0 for a cassette E 210.

The cursor (▮) jumps to the first position of »Start«.

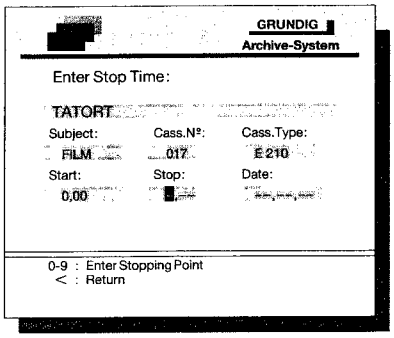
If there are already titles archived under this cassette type, the cassette type cannot be changed.

▶▶

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

8. Entering the starting point

0 0 0



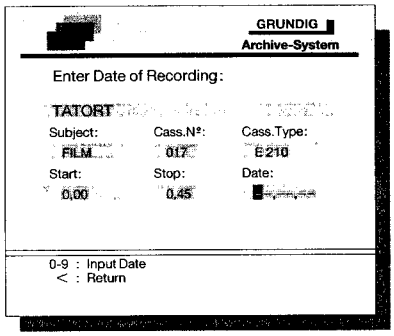
The starting point is the tape position where recording starts.

Enter the starting point as three figures with the numbered buttons 1, 2 to 9, 0 – e.g., 0 0 0 for 0 hours, 0 minutes.

The cursor (▮) jumps to the first position of »Stop«.

9. Entering the stopping point

0 4 5



The stopping point is the tape position where recording ends.

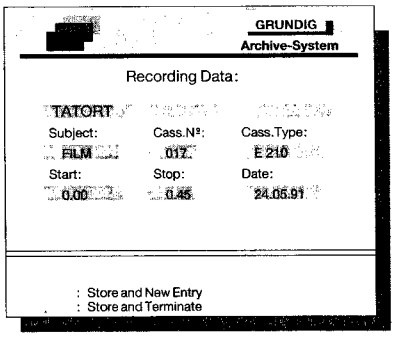
Enter the stopping point as three figures with the numbered buttons 1, 2 to 9, 0 – e.g., 0 4 5 for 0 hours, 45 minutes.

The cursor (▮) jumps to the first position of »Date«.

10. Entering the date

2 4 0 5

9 1



You can enter a date of your choice, e.g., when the title has been recorded, or when you have archived the title.

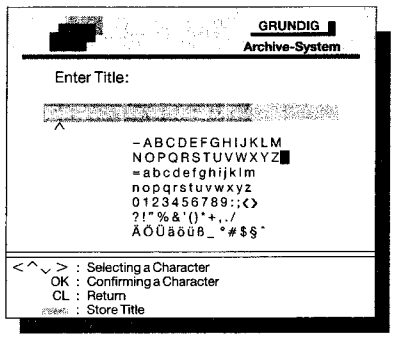
Enter the date as six figures (day – month – year) with the numbered buttons 1, 2 to 9, 0 – e.g., 2 4 0 5 9 1 for the 24th May 1991.

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

11. Entering further titles

(yellow)

or

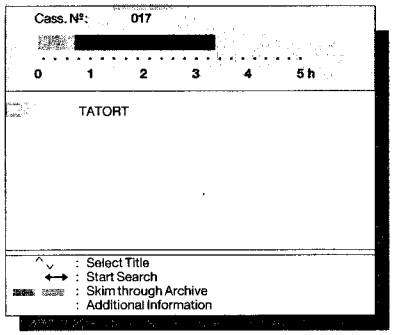


For re-archiving further titles, repeat the steps from point 4 on.

When making further entries for the same cassette, the cassette type and the starting point (= stopping point of the last entry) are automatically adopted.
It is not possible to change the cassette type.

12. Terminating re-archiving

(blue)



The contents of the cassette entered last into the archive appear on the table.

You see the current TV picture.

7. The Archive System

Informing About the Cassette Contents and Selecting Playback

The following information and functions are offered:
- Which and how many titles are on the cassette?
- Selecting titles for playback.
- Calling up additional information about titles.
- Modifying data in the archive (title and subject).
- Completely clearing entries from the archive.

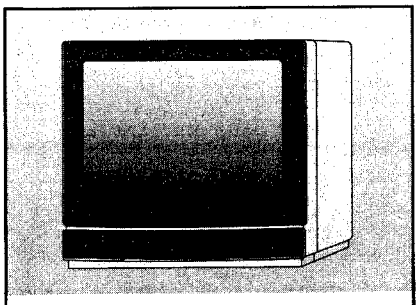
You need these functions also when you have started a recording without archiving (e.g., immediate recording) and only wish to change the title and subject.

Preparations

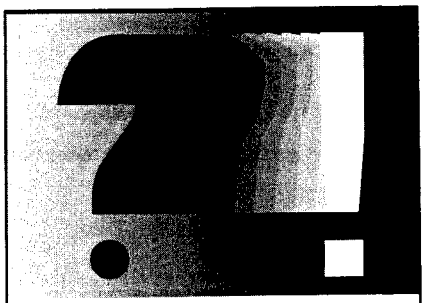
Switch on the TV set.

Select the AV programme position for video playback on the TV set.

Press these buttons on the remote control handset

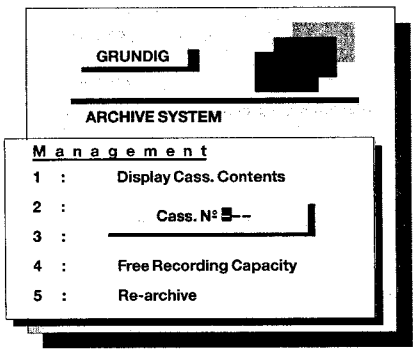


On the picture screen of your TV set appears



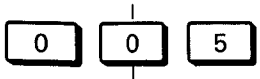
Explanations

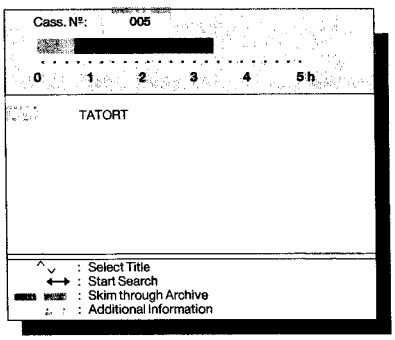
1. Selecting a function



The message »Cass. Nº ---« prompts you to enter the number of the desired cassette.

2. Entering the cassette number





Enter the cassette number as three figures with the numbered buttons 1, 2 to 9, 0 – e.g., 0 0 5 for the cassette 5.

If the cassette number is not yet archived, a message like »Cass. Nº 005 No Entries« will appear.

The table shows the first six titles of the cassette.

Press these buttons on the remote control handset	On the picture screen of your TV set appears.	Explanations

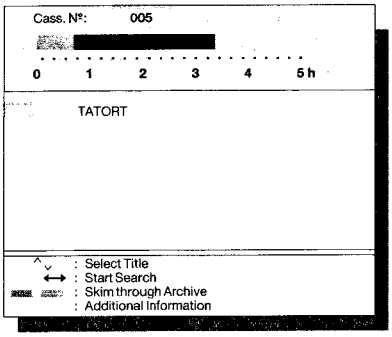
3. Selecting titles

a) step by step

▼ or ▲

b) to further titles

▶



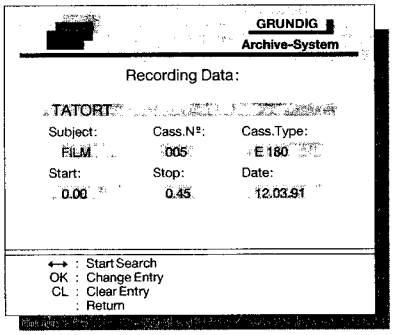
From this table, you can ...
... call up additional information (see point 4), or
... "page" the archive (see point 5), or
... select titles for playback (see point 6), or
... terminate the function (see point 7).

---

4. Additional information

a) call up

■ (blue)



The table shows the data for the selected title.

Now you can return to the table of all titles by pressing the button ■ (blue), or
modifiy the additional information.

It is possible to clear the title with all data by pressing the button CL.

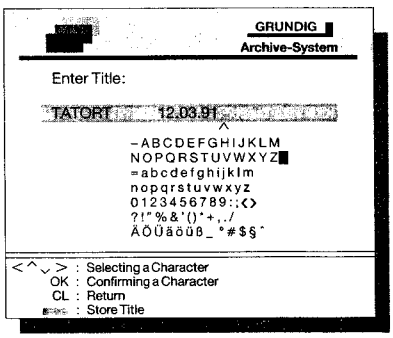
b) modify

OK

If you do not wish to modify the title or the data of the title, then press the button ■ (blue) and continue with point 4d, or

c) modify titles

▲
◀ ▶
▼
OK



select the re uired letters/characters with the butto ◀, ▶, ▲ or ▼. A blank can b found behind the "Z" in the character t.

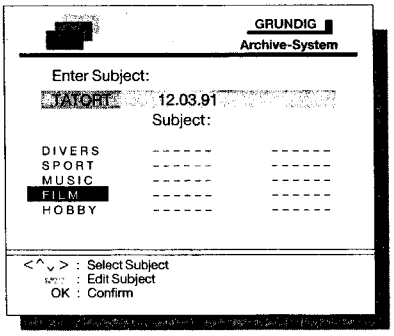
Confirm the le er/character with the button OK. The rsor (^) jumps 1 position to the righ

With the butto CL the cursor (^) can be moved to he left. This permits to overwrite an ready confirmed character.

Repeat the ab ve steps for the next letters/character

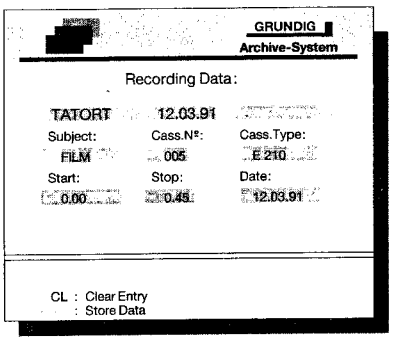
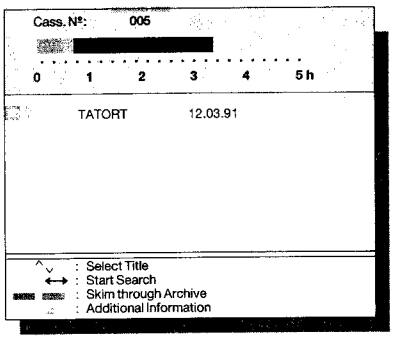
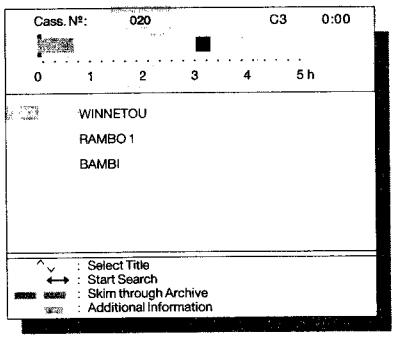
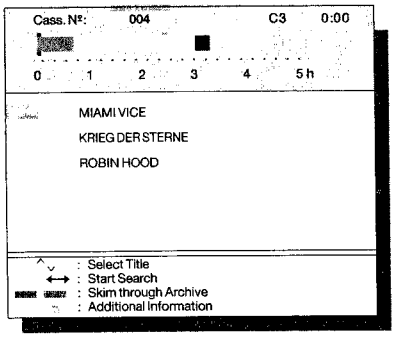
Now the title c n be stored.

If a "Blank Ti " is stored, »REC.« appears as title



■ (blue)

▶▶

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations
d) Allocating the title a different subject ▲ ◀ ▶ ▼ OK		If you do not wish to change the subject, then press the button OK, or select a different subject with the buttons ◀, ▶, ▼ or ▲ and confirm with button OK. If a "new" subject is required, you can enter a name of your choice. For this, refer to page 81, chapter "Creating a new subject".
e) Storing additional information (blue)		The table with the titles of the cassette appears again. With a function of this table, you can "page" the whole archive.
5. "Paging" the archive (green)		Shows the contents of the following cassette.
or (red)		Shows the contents of the preceding cassette. Not allocated cassette numbers are skipped. The number of the loaded cassette is highlighted on yellow background.

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

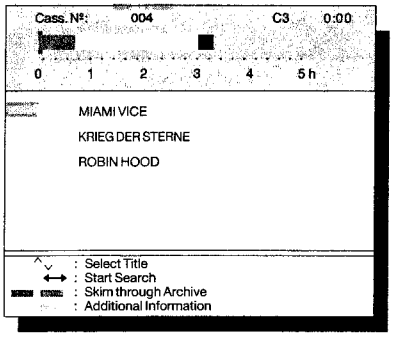
6. Selecting a title and starting the search function

a) step by step

▼ or ▲

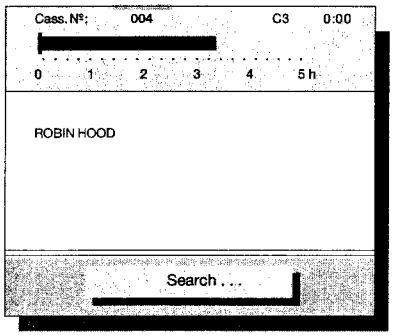
b) to further titles

▶



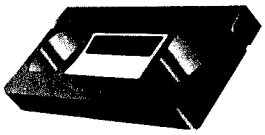
c) Starting the search function

↔



The recorder prompts you to load the required cassette.

d) Inserting a cassette



Load the correct cassette.

The recorder winds automatically to the selected title and playback is started.

d) Terminating playback

⏻

---

7. Terminating the function

⏻

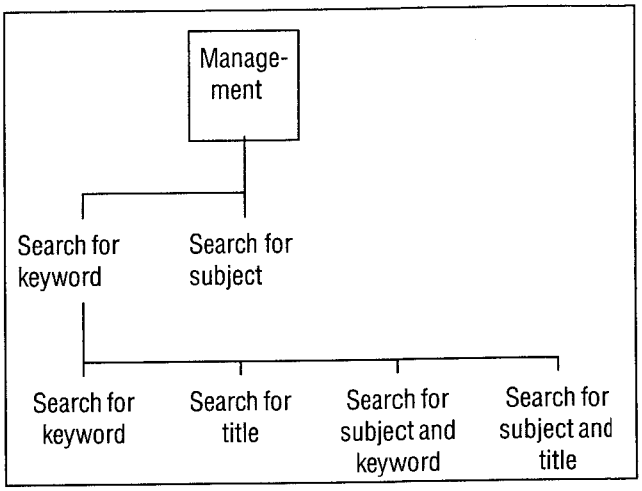
Necessary after the operating steps 1 to 5.

You see the current TV picture.

7. The Archive System

Searching Titles by Subjects and/or Keywords

With this function, you can search the archived titles.
You can search by different search arguments. Depending on the entry made, the table will show either the title or a number of titles.
The Figure opposite shows the different search arguments and the possible combinations.

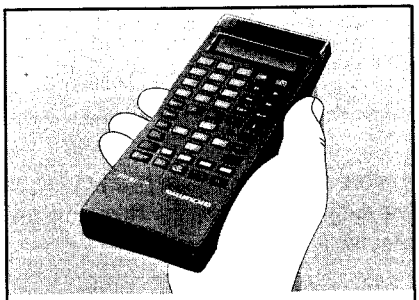


Preparations

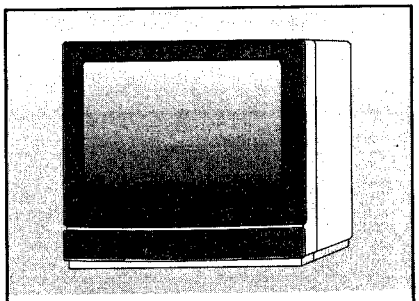
Switch on the TV set.

Select the AV programme position for video playback on the TV set.

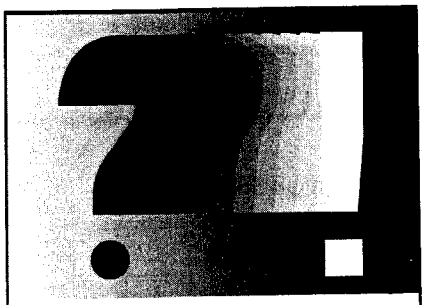
Searching for a subject



Press these buttons on the remote control handset

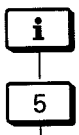


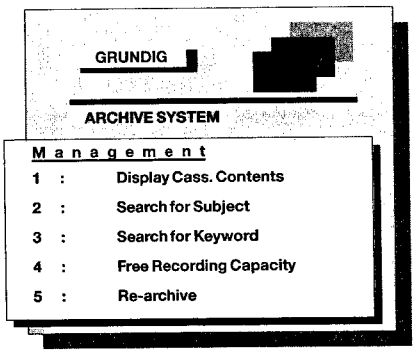
On the picture screen of your TV set appears



Explanations

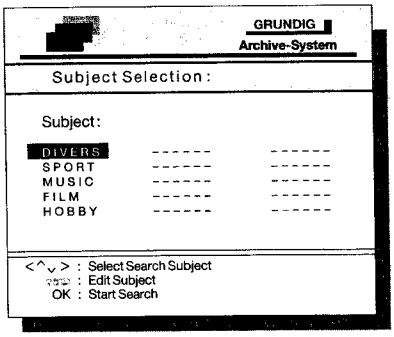
1. Selecting the function





Select the function "Search for Subject" in this table.

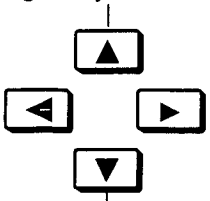
2. Selecting "Search for Subject"



7. The Archive System Searching for a Subject

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

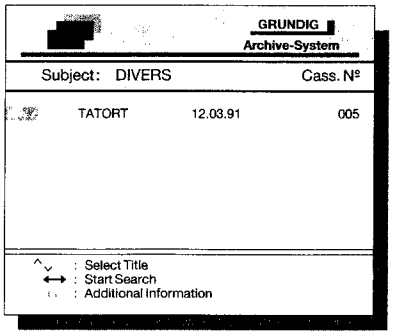
3. Selecting a subject



Select the desired subject witht the button ▼, ▶, ◀ or ▲.

4. Starting the subject search

OK



The recorder shows all titles it finds in the selected subject.

If the subject is "empty", the message »No Entries« appears.

If the searched title is allocated to the subject, then you can start the "Goto title" function (see point 6).

If several titles are listed, then select the desired title with the buttons ▼, ▲ or ▶ before starting the title search (see point 5).

5. Selecting a title

a) step by step

▼ ▲

If more than 6 titles have been found in the subject, you will find these on the next table.

b) to further titles

▶

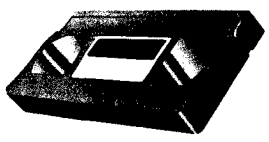
With the button ■ (blue) you can call up information about the title.
Press the button ■ (blue) again to return to the titles summary.

6. Starting the Goto Title function

↔

The recorder prompts you to load the required cassette.

7. Loading a cassette



Load the correct cassette.

The recorder winds the tape to the beginning of the title and starts playback.

8. Terminating playback

⏻

Searching for a Keyword or Title

There are several possible methods:

Search for Keyword

You need not enter the title literally. It suffices if you enter a word or a part of a word wich appears in a random position in the title. You can enter this in upper or lower case letters.

Example: Searched title "From Research and Technics".

Possible entries for the search word:
"From Research and Technics", or
"Research", or
"Technics", or
"Tech", or
"nics".

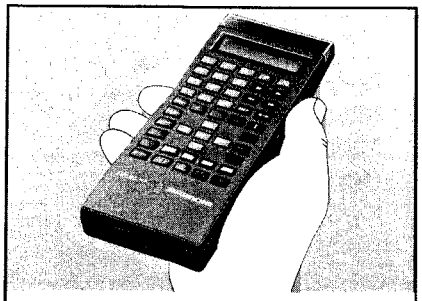
The search will be slowed down and – depending on the search word – many titles may be listed.

Search for Title

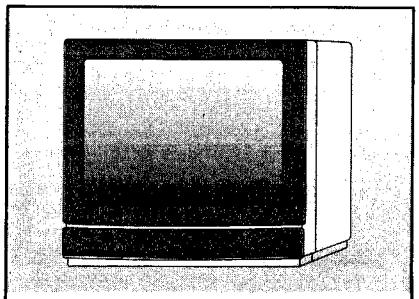
The search is fast, but you must enter the title exactly (also with blanks).
Only the searched title will be shown.

Search for Keyword/Titel and Subject

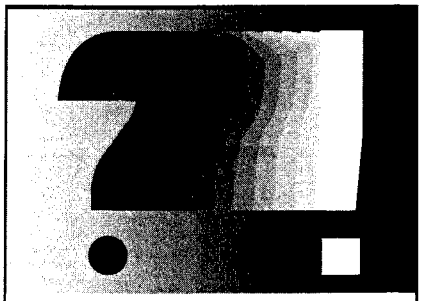
If you know the subject to which the title has been allocated, then you can restrict the search argument.
The recorder will search for the keyword/title only in the selected subject.



Press these buttons on the remote control handset

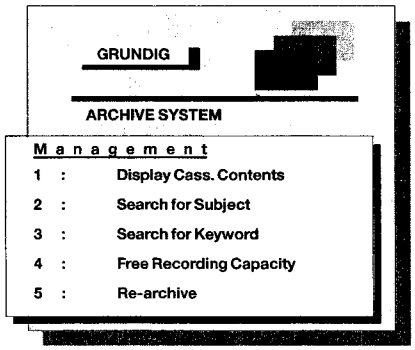


On the picture screen of your TV set appears

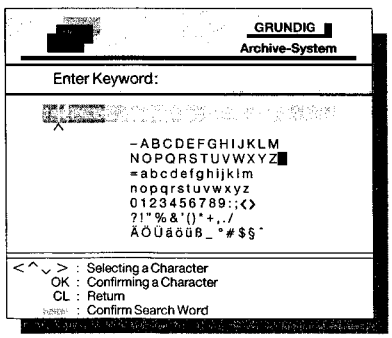


Explanations

1. Selecting the function

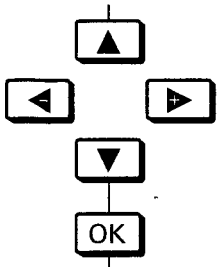


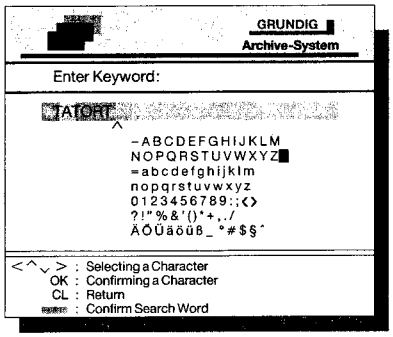
Select the function "Search for Keyword" in this table.



Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

2. Entering the search word





Select the required letter with the button ◄, ►, ▼ or ▲.

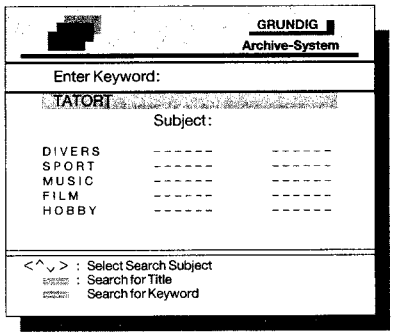
Confirm the letter with the button OK. The cursor (^) jumps one position to the right.
Use the button CL to move the cursor (^) to the left.

Repeat the above steps for the remaining letters.

When the entry is completed, the search word can be confirmed.

3. Confirming the search word

■ (blue)



For which argument the recorder shall search?
- Title
- Keyword
- Title with subject
- Keyword with subject (see point 4 a, b, c).

4. Starting the search

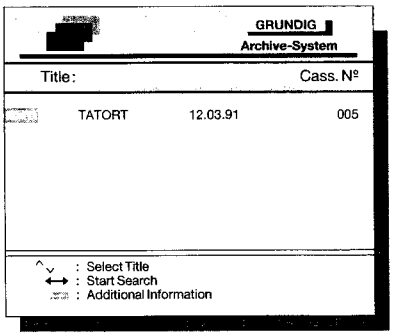
a) for a title

■ (red)

or

b) for a keyword

■ (green)

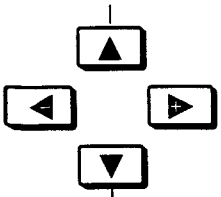


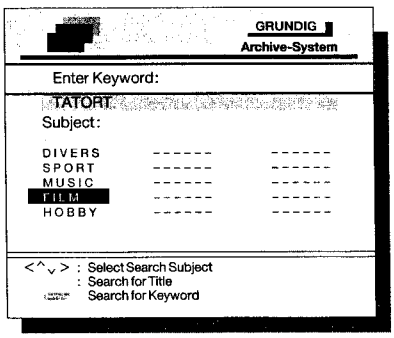
The recorder searches for the title in the archive system and shows this together with the cassette number.

The recorder searches for the keyword in the archive system and lists all titles containing the same letter sequence.
The respective cassette number is shown beside the title.

or

c) in addition for the subject





Select the desired subject with the key ◄, ►, ▼ or ▲, then start the search with the button ■ (red) or ■ (green).

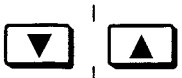
If the recorder does not find the title/keyword under the selected subject, the message »No Entries« will appear.

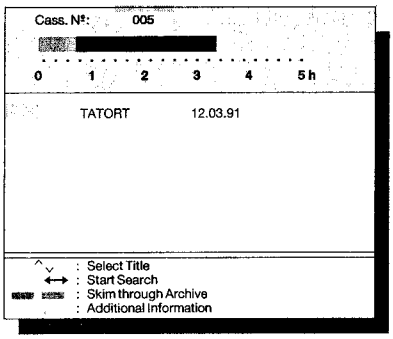
If more than 6 six titles are found, these will be listed on the next table.
Press the button ► to switch to the next table.

▶▶

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

5. Searching a title for playback





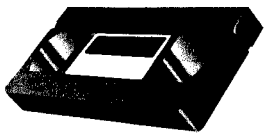
This is only required when the table shows several titles.

With the button ■ (blue), you can call up additional information about the title. Press the button ■ (blue) again to return to the titles list.

6. Starting the Goto Titles function

The recorder prompts you to load the required cassette.

7. Loading the cassette



Load the correct cassette.

The recorder winds the tape to the beginning of the title and then starts playback.

8. Terminating playback

7. The Archive System

Free Recording Capacity

With this function, you can inform you about the space still available on the cassette for new recordings.

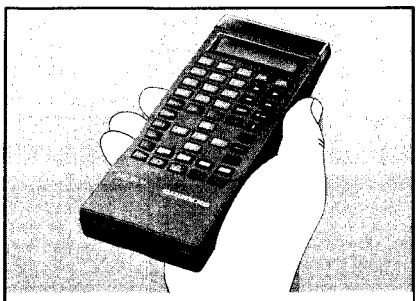
The recorder displays the archived cassettes ordered by numbers along with the indications of the cassette type and the available recording capacity.

With the search function, you can "goto" the free tape position to start there a new recording.

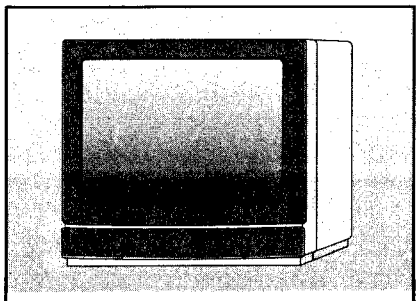
Preparations

Switch on the TV set.

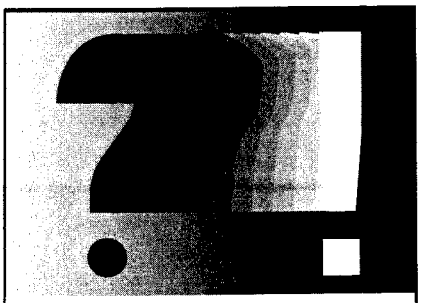
Select the AV programme position for video playback on the TV set.



Press these buttons on the remote control handset



On the picture screen of your TV set appears

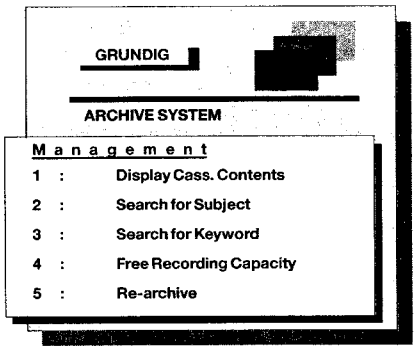


Explanations

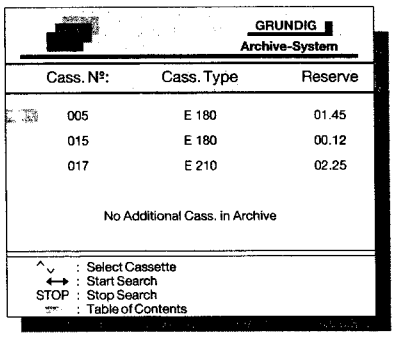
1. Selecting the function

i

5



4



The recorder lists all archived cassettes. Under the column »Free«, the still available recording time is shown.

Listing of further cassettes can be stopped with the STOP button (Stop Search).

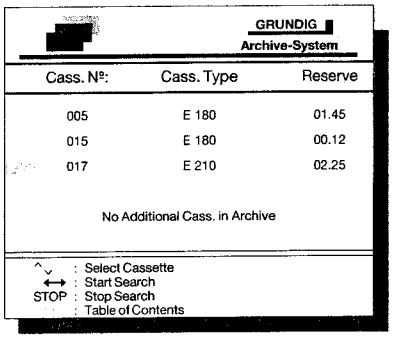
7. The Archive System Free Recording Capacity

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations

2. Selecting a cassette

a) step by step

b) to next table

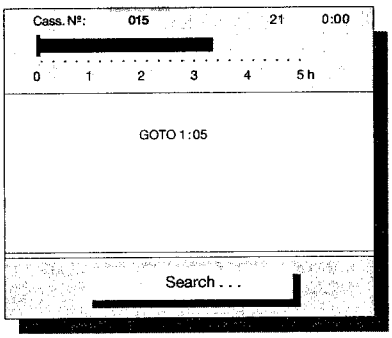


With the button ■ (blue), you can call up information about the selected cassette.

Press the button ■ (blue) again to return to the cassettes summary.

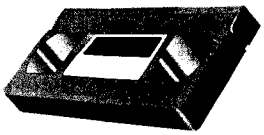
Press the button ▶ to switch to the next table showing further cassettes.

3. Starting the "GOTO" function



The recorder prompts you to load the required cassette.

4. Inserting a cassette



Load the correct cassette.

The recorder winds the tape to the free tape position and then switches to stop. Now you can start the next recording at this position.

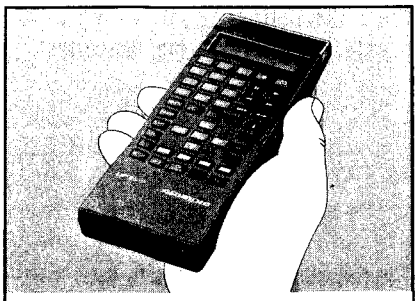
7. The Archive System

"Skimming Through" the Archive (Paging)

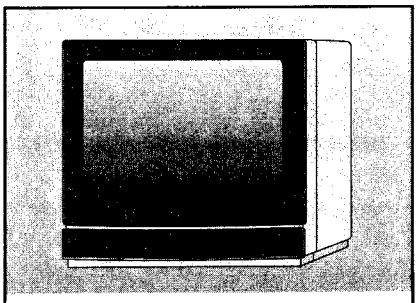
Preparations

Switch on the TV set.

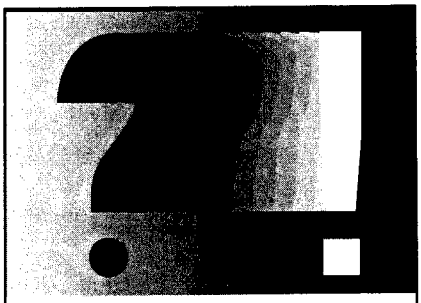
Select the AV programme position for video playback on the TV set.



Press these buttons on the remote control handset

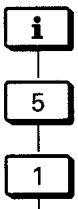


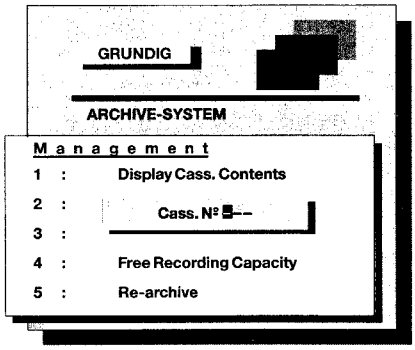
On the picture screen of your TV set appears



Explanations

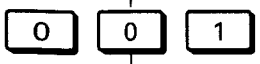
1. Selecting the function "Display Cass. Contents"





Enter an archived cassette number.

2. Entering an archived cassette number



Enter the cassette number as three figures with the numbered buttons [1], [2] to [9], [0], e.g., [0] [0] [1] for cassette 1.
Now you can "skim through" (page) the archive.

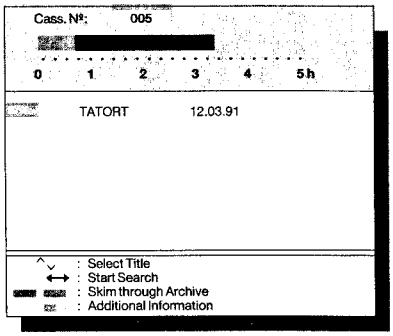
3. Skim through archive

a) by increasing numbers

(green)

b) by decreasing numbers

(red)



Each pressure on the button displays an archived cassette with its titles.
Not allocated numbers are skipped.
The number of the inserted cassette is highlighted on yellow background.

4. Terminating the function

You see the current TV picture.

7. The Archive System

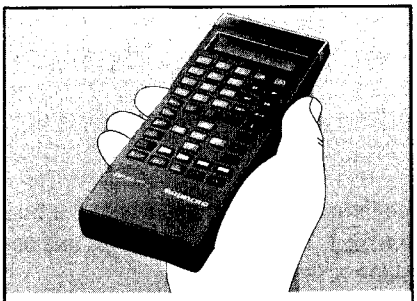
Creating a New Subject (Edit Subject)

If you do not like the existing subject names, you can change these names.

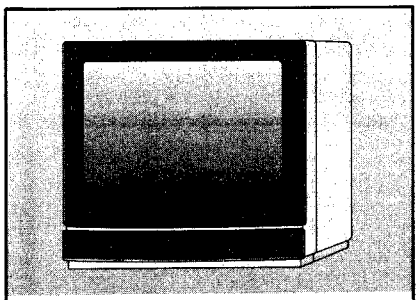
Preparations

Switch on the TV set.

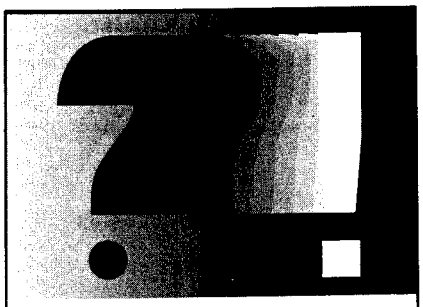
Select the AV programme position for video playback on the TV set.



Press these buttons on the remote control handset

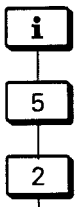


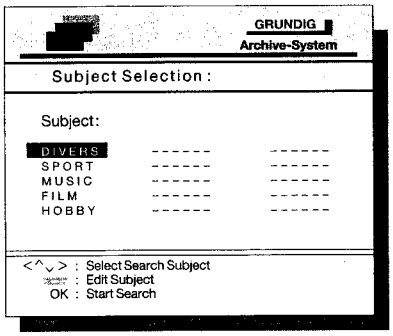
On the picture screen of your TV set appears



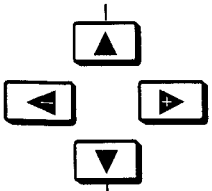
Explanations

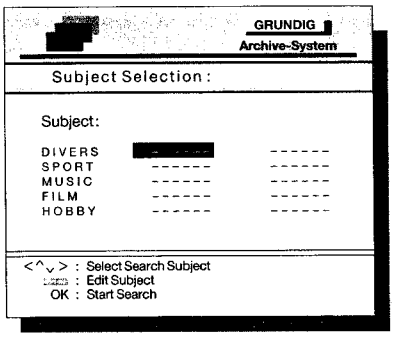
1. Selecting the function





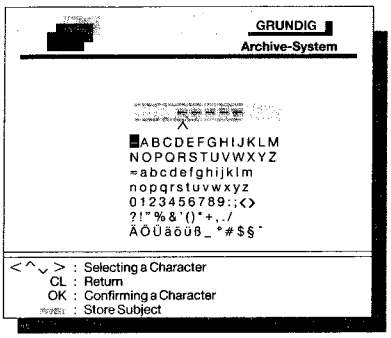
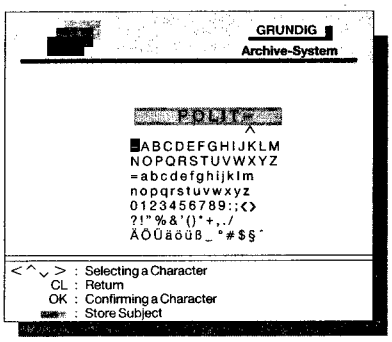
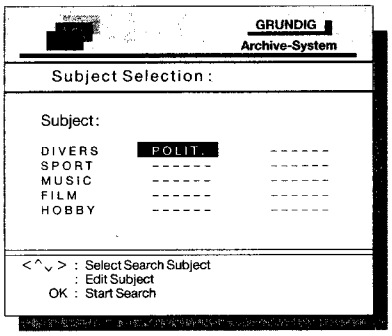
2. Selecting a subject





It is not possible to change (edit) the subject »DIVERS«.

Select the subject the name of which you wish to change, or a free subject with the button ▼, ▶, ▲ or ◀.
The selected subject is highlighted on blue background.

Press these buttons on the remote control handset	On the picture screen of your TV set appears	Explanations
3. Entering the name of the subject		You can use up to 6 letters/characters for a subject name.
(green) a) Selecting a letter/character ▲ ◀ ▶ ▼		Select the required letter/character with the button ◀, ▶, ▼ or ▲. A blank can be found behind the "Z" in the character set.
b) Confirming the letter/character OK		Confirm the entered letter with the button OK. The cursor (^) jumps one position to the right. Use the button CL to move the cursor (^) to the left. This permits to overwrite an already confirmed letter/character. Repeat the above steps for the remaining letters/characters.
c) Storing the name (blue)		Now you can store in memory the name of the subject.
4. Terminating the function		You see the current TV picture

Modifying a Cassette Number

You may require this function if you wish to record completely new an already archived cassette and allocate a new cassette number.

For this, press one after the other the numbered buttons 8 5 9 6, and then the button OK.

Enter the new cassette number as three figures with the numbered buttons 1, 2 to 9, 0 and confirm with button ↵.

8. Special Functions

Teletext Operation with this Recorder

Teletext is a free service of the TV stations which is transmitted with the TV signal, processed by the recorder, and then displayed on the screen of your TV set.
Teletext consists of a large number of text pages, e.g., sports and political news, stock market prices, weather forecasts, and a lot of other information.

Preparations:

Switch on the TV set.

Select the AV programme position for video playback on the TV set.

Selecting a TV programme

The Teletext offer and the organization and the design of the individual pages differ from TV station to TV station.

Therefore, first select the TV station (programme) the Teletext pages of which you wish to use with the button ▲ or ▼.

TOP-text mode (Table Of Pages)

With this advanced development of the conventional Teletext mode, you no longer need to enter the numbers of the desired Teletext pages, but can call up the various topics, chapters, and individual pages from a contents page by simply pressing a button.
The Figure below shows the functional diagram.

Call up the »Info« table with button i.

Select the line »Teletext« in the »Info« table with the numbered button 2.
The Teletext page 100 (= Teletext contents page) appears.

Selecting a topic

Select the desired topic by repeatedly pressing the button ■ (blue).
The next topic is shown in the blue Info line.

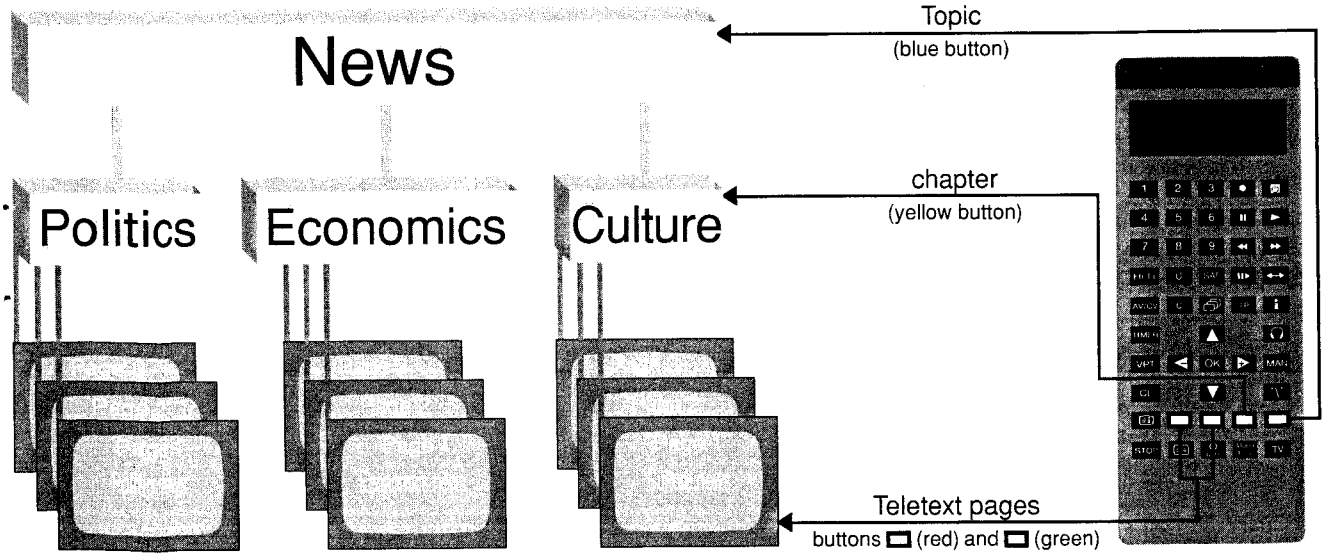
Selecting a chapter

Select the desired chapter of the respective topic by repeatedly pressing the button ■ (yellow).

The next chapter of the selected topic is shown in the yellow Info line.

If the selected chapter consists of several pages, these can be called up in forward direction with the button ■ (green) and in backward direction with the button ■ (red).

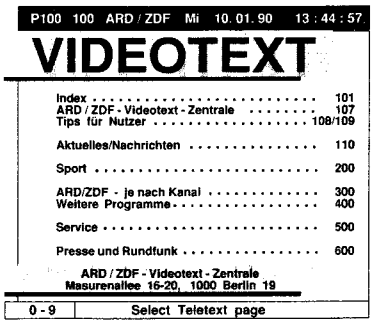
To enable a quick access to the selected Teletext pages, the recorder automatically stores three Teletext pages:
the page of the next topic; button ■ (blue),
the page of the next chapter; button ■ (yellow),
the following page of the selected chapter; button ■ (green).



Normal Teletext operation

Call up the »Info« table with the button [i].

Select the line »Teletext« in the Info table with the numbered button [2].
The Teletext page 100 (= Teletext contents page) appears.


P100 100 ARD / ZDF Mi 10. 01. 90 13 : 44 : 57
VIDEOTEXT
Index 101
ARD / ZDF - Videotext - Zentrale 107
Tips für Nutzer 108/109
Aktuelles/Nachrichten 110
Sport 200
ARD/ZDF - je nach Kanal 300
Weitere Programme 400
Service 500
Presse und Rundfunk 600
ARD / ZDF - Videotext - Zentrale
Masurenallee 16-20, 1000 Berlin 19
0 - 9
Select Teletext page

Selecting Teletext pages

Select the desired Teletext page in the contents page by entering the page number as three figures with the numbered buttons [1], [2] to [9], [0].
The page appears after a short time.

With the buttons [■] (red) or [■] (green), the Teletext pages can be "paged" step by step in forward or backward direction.

With each pressure on the button [■] (yellow), you can skip 10 pages.

With each pressure on the button [■] (blue), you can skip 100 pages.

To select the same Teletext page of another TV programme, press button [▲] (upwards) or button [▼] (downwards).

If a TV station offers the TOP-text system, the recorder switches automatically to this system.

Multiple pages

Some page numbers may contain several subpages, which are automatically "paged" by the broadcasting station.
These subpages can be recognized by an insert below the clock time indication; 1/2 means for example that you are viewing the first of two subpages.

If you wish to view a subpage for a longer time, you can interrupt paging by pressing the button [STOP].
The indication "Stop" appears in the upper left corner of the screen.

Press the button [STOP] again to undo this function.

Enlarging the character size

Repeatedly pressing the button [⊞] will

double the size of the characters in the upper half of the page,

double the size of the characters in the bottom half of the page,

return to normal viewing size over the full page.

Displaying concealed text

Certain Teletext pages may contain "hidden" information such as quiz answer or the VPS times for record programming.

Press the button [CL] to display the hidden information.

Press the button [CL] anew to conceal the information again.

Switching on the TV sound

The button [🔊] permits to switch on the sound of the TV programme. In the display of the recorder appear in addition the programme position and the sound level indication.
A further pressure on the button [🔊] switches off the TV sound again.

Terminating the Teletext mode

Press the button [⏻] to return to the television picture.

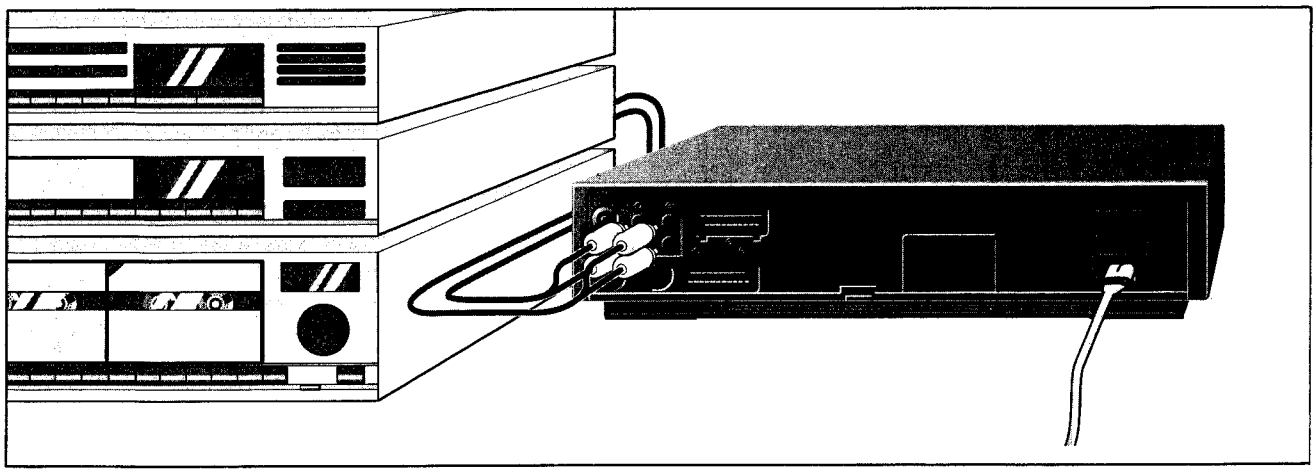
8. Special Functions

The Video Recorder as HiFi Tape Recorder

Your video recorder is provided with two separate systems for recording and playing back sound signals:

The mono (longitudinal) track
for sound reproduction on standard VHS video recorders and for post-synchronization (dubbing).

The hifi (helical) track
for stereo and two-channel-sound recordings.
Being equipped with this feature, your video recorder can also be used as hifi tape recorder for recording and playing back the hifi sound in top quality.



Preparations

Connect your hifi system with a commercially available audio cable to the AUDIO sockets on the back of the recorder.

⊖ AUDIO = audio input, R = RH channel, L = LH channel.

⊖ AUDIO = audio output, R = RH channel, L = LH channel.

Insert a cassette with sufficient playing time into the recorder.

Sound recordings from a hifi system

Press the button Hi-Fi and then the button ▲ (= loop-through operation).
Indication on the recorder: HI.
The recorder automatically adjusts the correct sound recording level.

Adjsting the sound level manually (if desired)

Press the button MAN.
Indication on the recorder: MAN.
Press and keep pressed the button ◄ or ► until the first red mark (+ 1 dB) of the record level indication of the recorder lights up during the loudest passages of the recording.
The second red mark should not light up (over-modulation).

Adjusting the sound balance (if desired)

The sound level control must be set to MAN!

Press the button ↔. The indication BAL appears on the recorder.
Press the button ▲ to shift the sound balance to the left or the button ▼ to shift it to the right.
The adjustment range of the sound balance is between 0-20 dB. On the recorder, the indication 0R to 20R (RH channel) or 0L to 20L (LH channel) appears.
The indication for the centre balance position is 0.
Press the button ↔ once again to terminate the sound balance adjustment.

Selecting longplay operation (if desired)
Press the button LP.
In the display of the recorder appears LP – the playing time of the cassette is doubled.

Starting sound recordings
Press the button ● a longer time.

Interrupting sound recordings
Press the button II.

Continueing sound recordings
Press the button ●.

Terminating sound recordings
Press the button ■.

HiFi sound reproduction

Press the button ▶ to start play.

If a recording has been made in the longplay mode, the recorder automatically switches to this mode.

Adjusting the hifi track

When playing cassettes which have been recorded on another recorder, it may be necessary to re-adjust the sound track position.

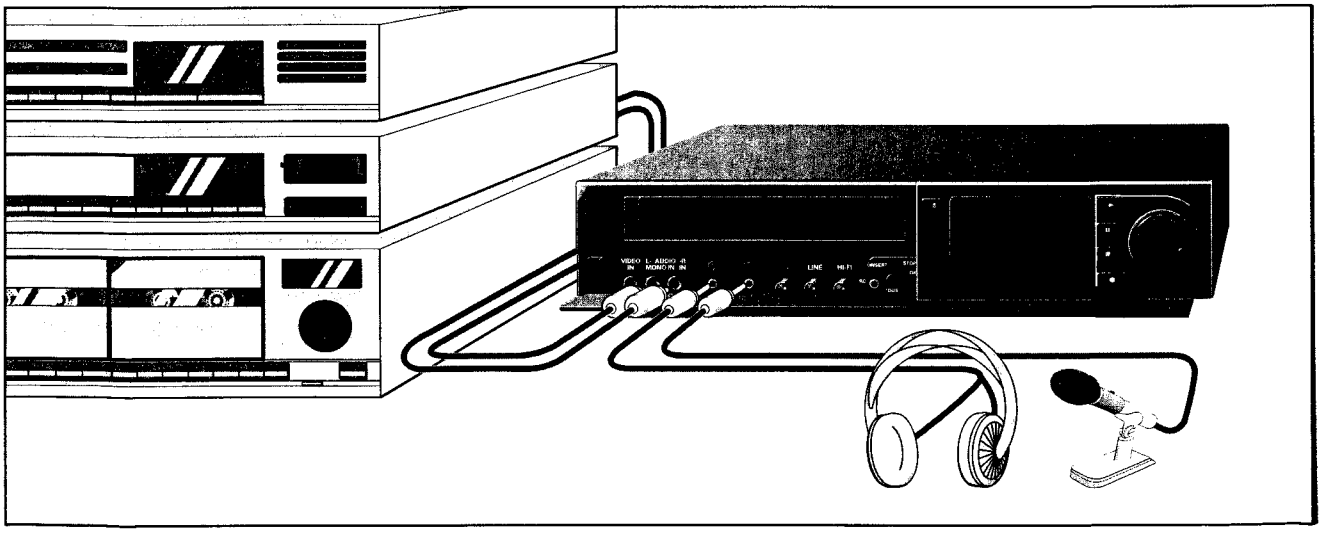
For this, press and keep pressed button ▲ or ▼.

The more vertical lines are shown in the display of the recorder, the better is the playback quality.

Dubbing

With your recorder, you have the possibility to add sound information to your video recordings at a later date.
For this, you can use three different sound sources:
The sound information on the hifi track of the tape;
the sound information from a hifi system connected to the AUDIO sockets on the front of the recorder;
the sound information from a connected microphone.

When dubbing, the original sound on the longitudinal track is completely erased. The sound on the hifi (helical) track is conserved.



Connections

Connect your hifi unit to the AUDIO sockets on the front of the recorder.
R = right-hand channel; L = left-hand channel.

Connect a mono microphone to the socket ⊅ on the front of the recorder.
Technical data of the microphone:
Level: ≥ 0,2 mV
Impedance: 200 Ω - 10 kΩ
Jack plug of 3.5 mm ø

▶▶

8. Special Functions Dubbing

Preparations

Unless otherwise stated, execute the following functions with the buttons and controls on the recorder.

Insert a recorded cassette into the recorder.

During playback, search the tape position where dubbing is to be started, then press the button ⏸ (playback-pause).
Indication in the display of the recorder: ⏸.

Press the button ○ DUB (activates the dubbing function).
Indication in the display of the recorder: DUB.

Mixing and adjusting the sound levels:
The sound level from the hifi track of the tape with the Hi-Fi control (only possible when the tape is running);
the sound level from the hifi unit with the control LINE;
the sound level from the microphone with the control 🎤.

It is recommended to switch off the sound inputs which are not used by turning the respective controls to their left stop position.

The sum of all sound signals must be adjusted so that the first red mark (+ 1 dB) of the sound record level indication of the recorder lights up during the loudest passages of the recording. The second red mark should not light up (sound over-modulation).

Starting dubbing

Press the button ▶ to start dubbing.
The original sound remains on the hifi track, the new sound is recorded on the longitudinal track.

Termianting dubbing

Press the button ○ DUB.
The video recorder switches to playback and you hear the sound from the mono (longitudinal) track. The indication on the display of the recorder changes from DUB into NORMAL.

If you wish to hear the sound from the mono (longitudinal) track and from the hifi track during playback, then repeatedly press the button 2 until MIX appears in the display of the recorder.

When playing a cassette with dubbed sound, you must switch to the mono (longitudinal) track so that you can hear the dubbed sound. For this, repeatedly press the button 2 on the remote control handset, until the "2" disappears from the display of the recorder.

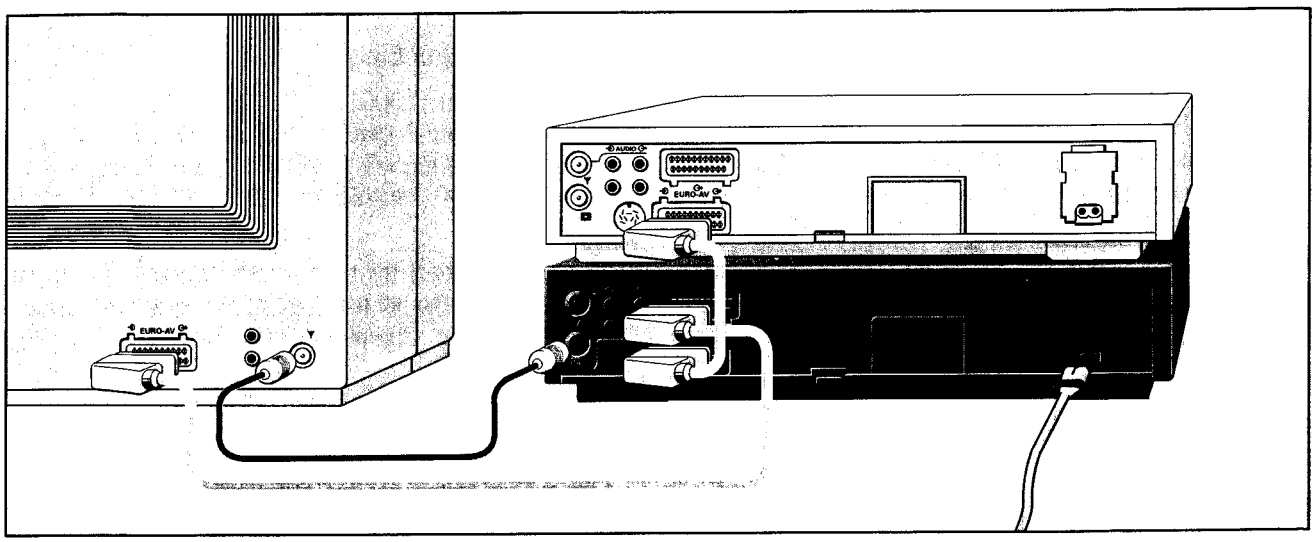
Monitoring the sound recording

Monitoring is possible with a stereo headphone connected to the socket ∩ (data of the headphone: Impedance 8Ω to 2kΩ, Jack plug of 3.5 mm ø).

The volume can be adjusted by first pressing the button ∩ on the remote control handset and then pressing the button ▶ or ◀ on the remote control handset as long as required.
Indication in the display of the recorder: ∩.

8. Special Functions

Copying Tapes with a Second Recorder



Connection

Connect the socket ⊖ EURO-AV ⊕ of your recorder with the corresponding socket of the second video recorder.
You can obtain a connecting cable from your specialized dealer.

Preparations

Switch on the TV set (serves as control monitor) and select the AV programme position for video playback.

Insert the cassette to be copied into the playback recorder and a cassette with sufficient free recording capacity into the recording recorder.

Copying

Repeatedly press the button [AV/CV] on the remote control handset, until AV appears in the display of the recording recorder.

> When copying recordings of SECAM colour broadcasts, you must press in addition the button [C] on the remote control handset. Indication in the display of the recorder: SEC.

Start playback on the playback recorder and simultaneously press the button [●] on the recording recorder.
Copying is started; the TV set can be used as control monitor.

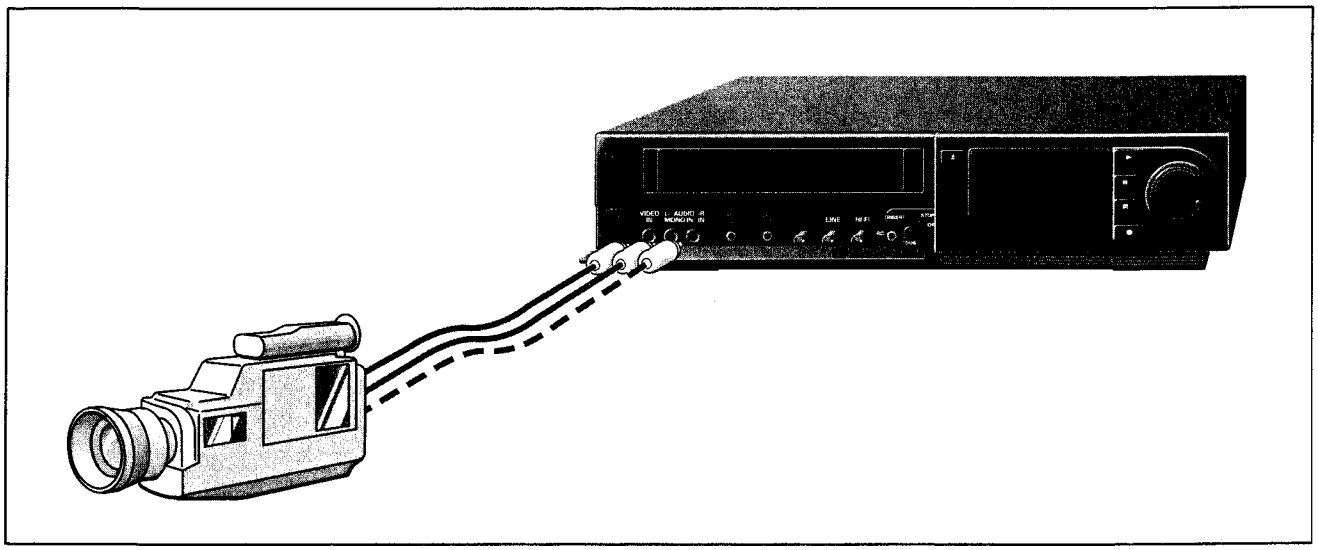
Terminate recording with the button [⏻].

8. Special Functions

Operation with a Camera Recorder

Copying Tapes with a Camera Recorder

(without synchro-edit-start function)



Connection

Connect the VIDEO IN socket of your recorder with the corresponding socket of the camera recorder.

Camera recorder with mono sound

Connect the socket MONO IN of your recorder with the audio socket of the camera recorder.

Camera recorder with stereo sound

Connect the sockets L-AUDIO-R of your recorder with the audio sockets of the camera recorder.

Preparations

Switch on the TV set (serves as control monitor) and select the AV programme position for video playback.

Insert the cassette to be copied into the camera recorder and a cassette of sufficient free recording capacity into your recording recorder.

Copying

Switch your recorder to playback and search the end of the passage where you wish to join the new recording, then press the button ⏸ (playback-pause).
Indication in the display of the recorder: ▯▯.

Repeatedly press the button AV/CV until ▯V appears in the display of the recorder.

Switch the recording recorder to recording-pause by pressing the button ⏺. Indication in the display of the recorder: ⏺ ▯▯.

Switch the camera recorder to playback and search the beginning of the passage you wish to copy. Adjust the level of the sound to be copied with the level control LINE of your recorder (can be monitored via a headphone connected to the socket 🎧 of your recorder). Then press the Pause button on the camera recorder (playback-pause).

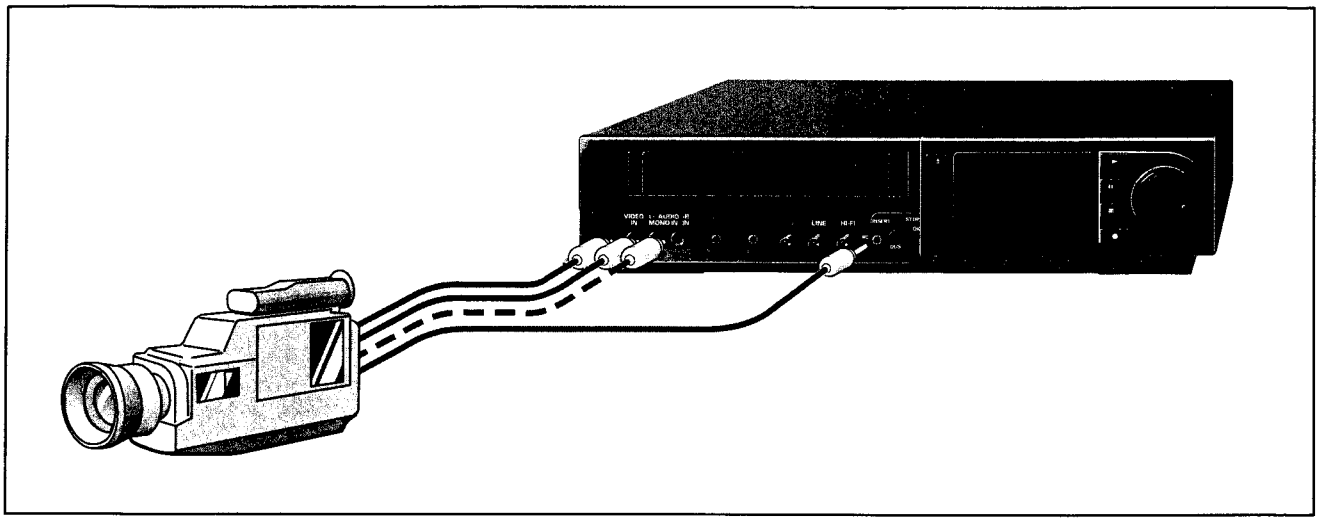
Start playback on the camera recorder and simultaneously start recording on your recorder by pressing the button ⏺ once again.

Copying is started. The TV set can be used as control monitor.

Terminate recording with the button ⏻.

Synchronous recording and editing without losses

Synchro-edit-start function.
Synchronous recording and editing without losses is possible by the communication ("dialogue") between your recorder (VS 960) and a GRUNDIG camera recorder which has this function stated in its operating instructions.



Connection

Connect the VIDEO IN socket of your recorder with the corresponding video socket of the camera recorder.

Connect the RC socket of your recorder with the corresponding Start/Stop socket of the camera recorder.
You can obtain an appropriate adapter cable from your specialized dealer.

Camera recorder with mono sound

Connect the socket MONO IN of your recorder with the audio socket of the camera recorder.

Camera recorder with stereo sound

Connect the sockets L-AUDIO-R of your recorder with the audio sockets of the camera recorder.

Preparations

Switch on the TV set (serves as control monitor) and select the AV programme position for video playback.

Insert the cassette to be copied into the camera recorder and a cassette of sufficient free recording capacity into your recording recorder.

Copying

Switch your recorder to playback and search the end of the passage where you wish to join the new recording, then press the button ⏸ (playback-pause).
Indication in the display of the recorder: ▯▯.

Repeatedly press the button AV/CV until CV appears in the display of the recorder.

Switch the recording recorder to recording-pause by pressing the button ⏺. Indication in the display of the recorder: REC ▯▯.

Switch the camera recorder to playback and search the beginning of the passage you wish to copy. Adjust the level of the sound to be copied with the level control LINE of your recorder (can be monitored via a headphone connected to the socket 🎧 of your recorder). Then press the Pause button on the camera recorder (playback-pause).
Indication in the display of the recorder: CAMERA.

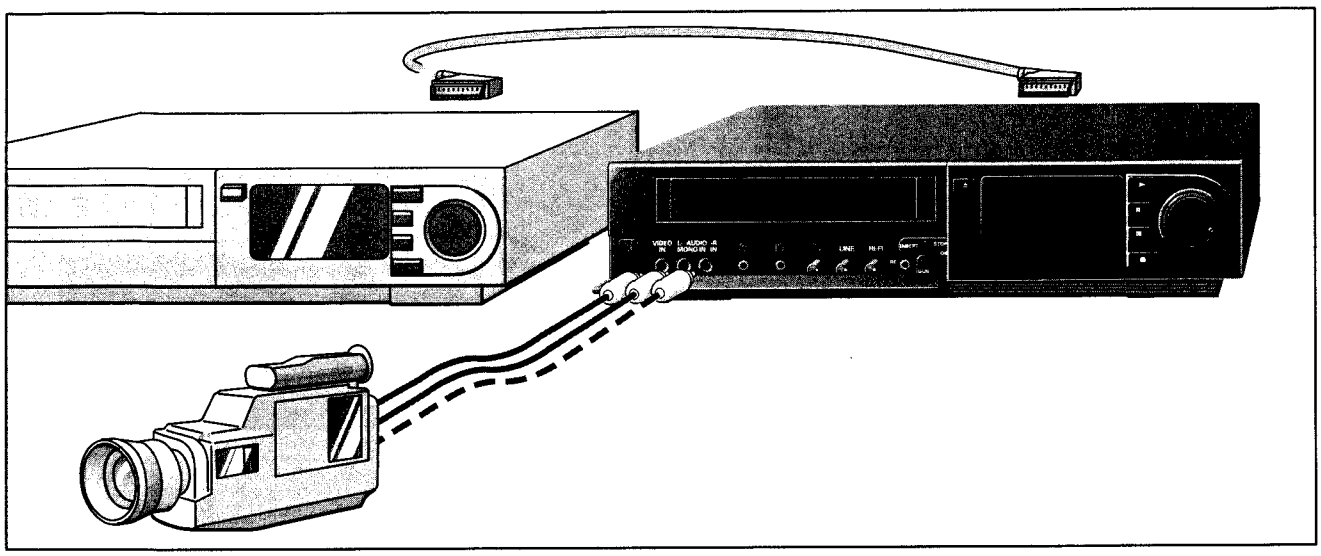
Start synchronous recording by pressing the button ⏺ once again. Indication in the display of the recorder: SYN-E ▯

After a short data communication ("dialogue") between the video recorder (VS 960) and the camera recorder, playback from the camera recorder and recording on your video recorder are synchronously (simultaneously) started.

Terminate recording with the button ⏻.

Inserting new recordings at a later date (Insert editing)

You can insert new recordings into already existing recordings at a later date, for example certain passages which are delivered by external video/audio sources.



Connection

Connect the camera recorder to the sockets AUDIO IN and VIDEO IN on the front of the recorder.

and/or

connect a video recorder to the socket ⊖ EURO-AV ⊖ on the back of the recorder.

Operation

In playback or picture search mode, search the tape position where you wish the recording to be inserted to end, then press the button [II], and then the button INSERT ○ STOP on the recorder.
The tape position is electronically marked. In the display of the recorder appears the indication INSERT.

The hours/minutes indication is automatically switched to the 5-position tape length indication and reset to 0:00:00.

In playback mode, search the tape position where you wish the recording to be inserted to begin, then press the button [II], and then the button INSERT ○ OK on the recorder.
The recorder switches automatically to recording-pause.
In the display of the recorder appears the indication ⊛ II.
This tape position is also electronically marked.

Select the programme delivered by the external video/audio source. For this, repeatedly press the button [AV/CV] on the remote control handset unitl the required indication appears on the recorder:

AV = video/audio source connected to socket ⊖ EURO-AV ⊖;

CV = video/audio source connected to the sockets AUDIO IN and VIDEO IN on the front of the recorder;

or

select the desired TV programme position with the numbered buttons [1], [2] to [9], [0] and confirm with button [▲].

The sound will be recorded on the hifi track of the recorder. If you wish that the sound be recorded on the mono (longitudinal) track, then press the button ○ DUB on the recorder.
In the display of the recorder appears: INSDUB.

> When selecting the CV video/audio source, the sound recording level must be adjusted with the control LINE so that the red mark + 1 dB lights up during the loudest passages.

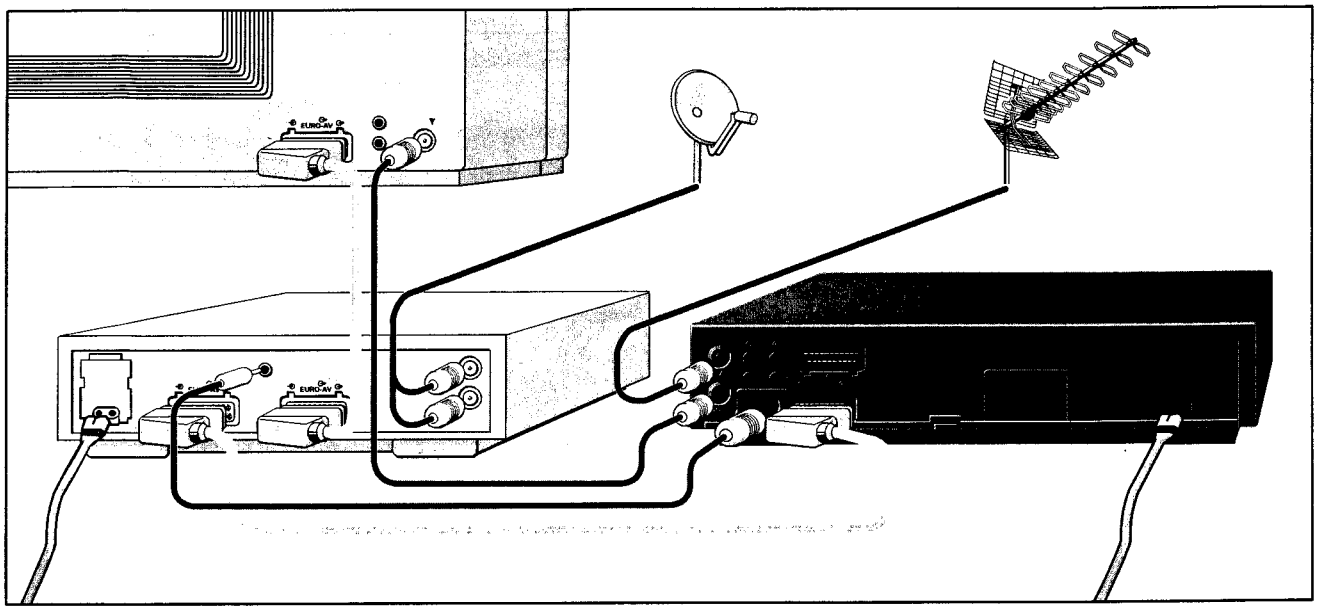
Start playback from the external video/audio source.

Start the Insert function by pressing the button [II].

The new picture passages are inserted between the marked tape positions and then the recorder switches to playback-pause.
In the display of the recorder appears: II.

8. Special Functions

Operation with a Grundig Satellite Receiver Fitted with two EURO-AV Sockets



Preparations

Switch off the TV set and the satellite receiver.

Disconnect the mains cable of the video recorder from the wall outlet.

Connection

Insert the aerial plug of the satellite aerial into the socket **X** or **Y** of the satellite receiver.

Connect the EURO-AV socket (to recorder) of the satellite receiver and the socket ⊖ EURO-AV ⊖ of the video recorder with an EURO-AV cable.

Connect the socket VCR of the satellite receiver and the Universal socket of the video recorder with a GRUNDIG SAT-FB cable* (order No 25511-384.01).

Insert the aerial plug of the normal TV aerial into the socket Y of the video recorder.

Connect the socket ▭ of the video recorder and the socket Y of the TV set with a commercially available aerial cable.

Connect the EURO-AV socket ▭ of the satellite receiver and the EURO-AV socket of the TV set with an EURO-AV cable.

* Can only be obtained from GRUNDIG branch offices or from the GRUNDIG after-sales service (Kundendienst-Zentrum, Nürnberg-Langwasser, Germany).

Operation

Switch on the TV set and the satellite receiver.

Reconnect the mains cable of the video recorder to the wall outlet.

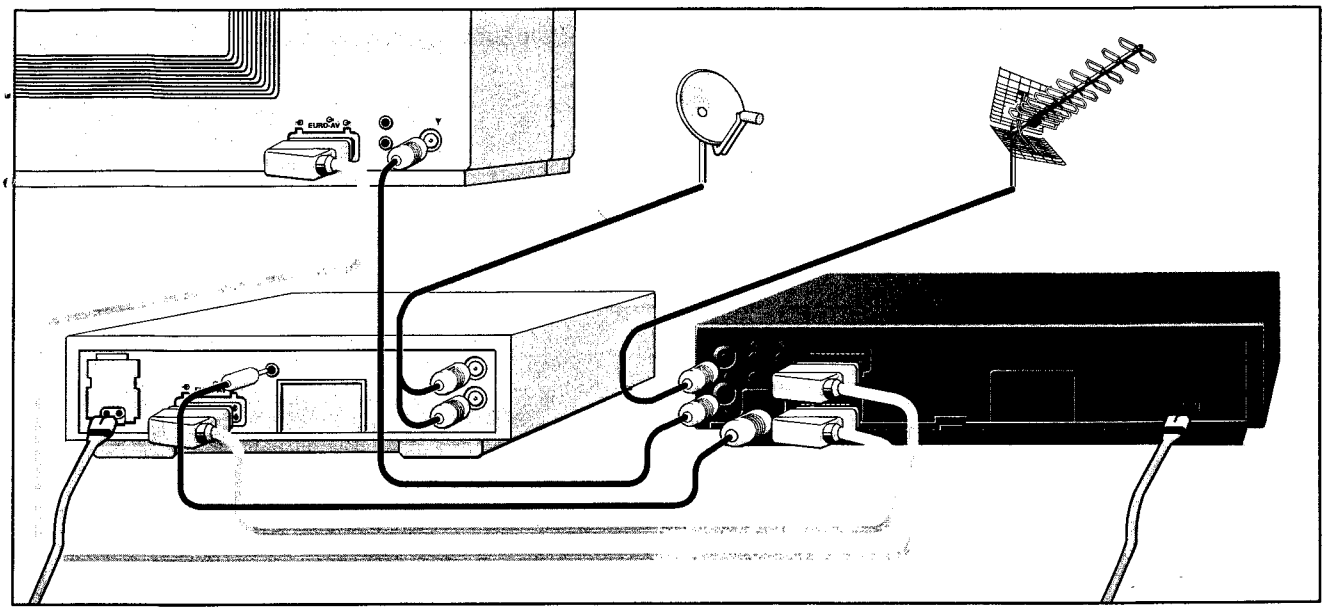
How to record satellite broadcasts is described on page 30.

Record programming for satellite broadcasts is described in the programming examples of the variants 1 and 4.

Please observe!
So that the video/audio signal of the video recorder can pass via the EURO-AV connection to the TV set during playback, the satellite receiver must be switched to standby.

8. Special Functions

Operation with a Grundig Satellite Receiver Fitted with one EURO-AV Socket



Preparations

Switch off the TV set and the satellite receiver.

Disconnect the mains cable of the video recorder from the wall outlet.

Connection

Insert the aerial plug of the satellite aerial into the socket **X** or **Y** of the satellite receiver.

Connect the EURO-AV socket (to recorder) of the satellite receiver and the socket ⊖ EURO-AV ⊖ of the video recorder with an EURO-AV cable.

Connect the socket VCR of the satellite receiver and the Universal socket of the video recorder with a GRUNDIG SAT-FB cable* (order No 27511-384.01).

Connect the socket Y of the video recorder and the socket of the TV set with a commercially available aerial cable.
Insert the aerial plug of the normal TV aerial into the socket Y of the video recorder.

Connect the EURO-AV ⊖ socket of the video recorder and the EURO-AV socket of the TV set with an EURO-AV cable.

* Can only be obtained from GRUNDIG branch offices or from the GRUNDIG after-sales service (Kundendienst-Zentrum, Nürnberg-Langwasser, Germany).

Operation

Switch on the TV set and the satellite receiver.

Reconnect the mains cable of the video recorder to the wall outlet.

How to record satellite broadcasts is described on page 30.

Record programming for satellite broadcasts is described in the programming examples of the variants 1 and 4.

Please observe the following!
If you wish to watch a satellite programme on the TV set, then the video recorder must be switched to EE operation (= loop-through operation). For this, press the button ⏻.
Then press the button AV/CV and then the button ▲ on the remote control handset.
In the display of the recorder appears: AV.

8. Special Functions

Your Recorder as TV Receiver

Your TV set, is it not yet equipped with a tuner for cable TV reception?

If this should be the case, you will have no problems, as your recorder is suited for cable TV reception, i.e., it can also receive TV programmes on special channels which are fed directly or via satellites into the cable TV system.

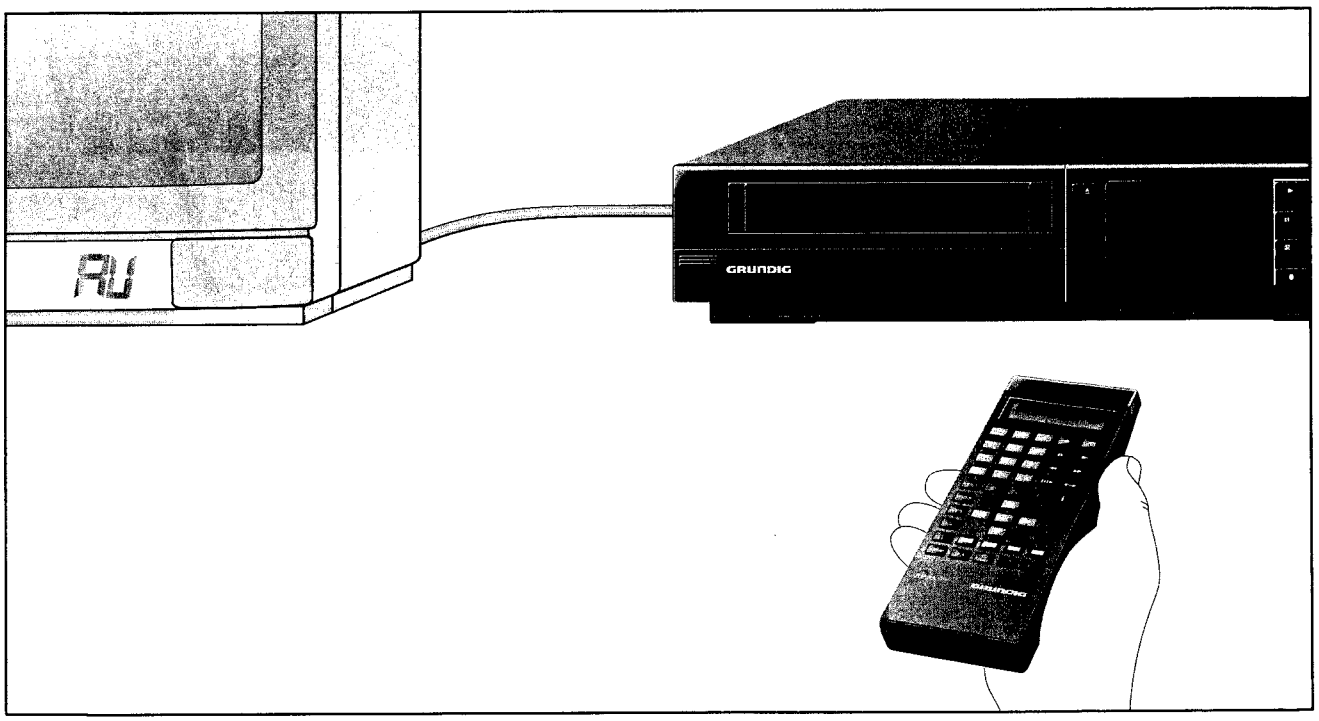
For this, the transmitter of the recorder must be switched on – refer to the respective chapter on page 9.

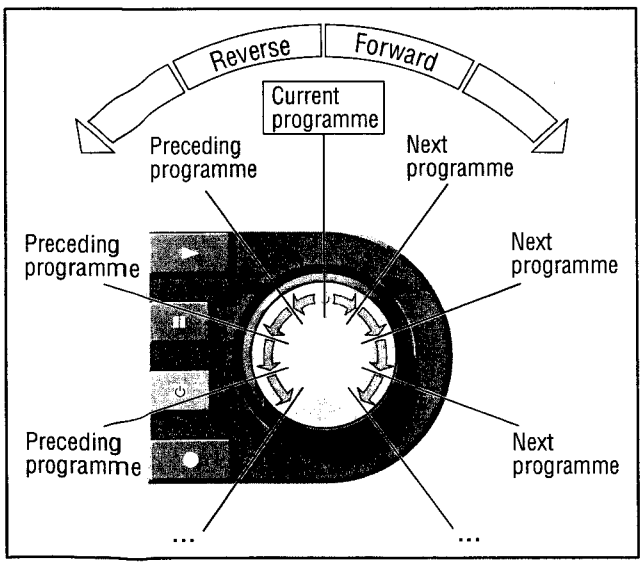
Preparations

Switch on the TV set and the recorder.
The TV set serves as control monitor.

Select the AV programme position for video playback via the aerial lead on the TV set.

Press the button ⏻ on the recorder.





Selecting a TV programme (position) on the recorder

With the remote control handset

Select the desired TV programme position with the button ▲ (up) or ▼ (down),
or

enter the desired TV programme position as one or two figures with the numbered buttons 1, 2 to 9, 0 and confirm with button ▲.
The selected programme appears on the picture screen of the TV set.

With the Jog wheel on the recorder

Select the desired TV programme position by turning the Jog wheel to the right (up) or left (down).
The selected programme appears on the picture screen of the TV set.

8. Special Functions

The Electronic Combination Lock

Your recorder is equipped with an electronic combination lock. This can be used to electronically "lock" all functions of the recorder. Even a cassette which is loaded after the lock has been activated cannot be removed until you have "unlocked" the recorder again.
The lock can be activated and deactivated quite simply by entering a one- to four-digit code number.

Enter this personal code number into the boxes opposite.

Your personal code number!

Locking the recorder

Prepare the recorder for the entry of the code number by first pressing the button [⏻], then the numbered buttons [8] [5] [0] [0], and finally the button [OK].
In the display of the recorder appears: 0000.

Enter a 1- to 4-digit code number with the numbered buttons [1], [2] to [9], [0].

> Remember to make a note of your personal code number!

Store the code number in memory by pressing the button [OK].
In the display of the recorder appears the indication LOCKED and the clock time.
The recorder is locked.

> If now a cassette is inserted into the recorder, it can only be removed after having unlocked the recorder.

If you should forget or mislay your personal code number, your specialized dealer will be able to unlock the recorder for you.

Unlocking the recorder

Enter your personal code number with the numbered buttons [1], [2] to [9], [0] and press the button [OK].
The indication LOCKED disappears from the display of the recorder, but the clock time indication remains on.
The recorder is unlocked and each of its functions can be used again.

Calling Up and Setting the Clock Time and the Date

Calling up the clock time and the date

You can call up the clock time and the date even during recording or playback by pressing the button [DATE] once or twice.

Setting the clock time

... automatically

During Teletext mode on programme position 1, the clock time is automatically set to the correct reading.

... manually

Press the button [⏻].

Enter the correct clock time (in hours and minutes) with the numbered buttons [1], [2] to [9], [0] and confirm with button [DATE].
Pressing the button [DATE] will start the clock.

> The digital clock continues running even when the recorder is disconnected from the mains (however, the clock time indication disappears from the display).

Setting the date

Press the button [⏻].

Press the button [DATE].
The date indication appears.

Enter the day and the month as four digits with the numbered buttons [1], [2] to [9], [0] and confirm with button [DATE].
The day, month, and year will be displayed.

Enter the year as two digits (e.g., 9 and 2 for 1992) with the numbered buttons [1], [2] to [9], [0] and confirm with button [DATE].

8. Special Functions

The Continuous Functions of the Recorder

Your recorder can:
Continuously record from different signal sources, e.g., from a TV receiver or from other units connected to the respective sockets.

Continuously play back.

The continuous function recording via the EURO-AV socket

Load a cassette with sufficient free recording capacity. Select the continuous function by pressing the numbered buttons [8] [5] [0] [2] and then the button [OK].
In the display of the recorder appears the indication:
CONT 2.
The recorder records until the tape end is reached, winds the tape back to its beginning, and starts recording again.

Terminate the continuous function witht the button [▲] on the recorder.

Continuous function recording via the aerial socket

Adjust the desired TV programme on programme position 1 (see pages 12 to 18). Load a cassette with sufficient free recording capacity. Select the continuous function by pressing the numbered buttons [8] [5] [0] [1] and then the button [OK].
In the display of the recorder appears the indication: CONT 1.
The recorder records until the tape end is reached, wind the tape back to its beginning, and starts recording again.

Terminate the continuous function with the button [▲] on the recorder.

For the continuous function recording, do not use an archived cassette.

A continuous recording is not archived by the recorder.

The continuous function playback

Load a recorded cassette. Start playback by pressing the button [▶].

When the tape position where playback is to be started is reached, press the button [⏻].

Mark this tape position by pressing the numbered buttons [8] [5] [0] [3] and then the button [OK].
In the display of the recorder appears the indication: CONT 3.
The tape is wound back to its beginning and playback is started.
When the marked tape position is reached, the tape is wound back to its beginning and playback is started again.

Terminate the continuous function with the button [▲] on the recorder.

8. Special Functions

Remote Control of other Grundig Video Recorders

With the remote control handset of this recorder, you can control several different GRUNDIG video recorders independently of each other:

Your VS 960 and a second video recorder of the models 600, 700, 800 or 900 series.

Your VS 960 and a second video recorder of the models 400 or 500 series.

To make this possible, the remote control handset and/or the respective video recorder must be adapted.

The adaption of the remote control handset is lost when changing its batteries.

Remote control of two video recorders of the models 600, 700, 800 or 900

For the remote control of your VS 960, no adaption is required.

For the remote control of a second video recorder of the models 600/700/800/900 series, it is necessary to change the command structure of the recorder.

Disconnect your VS 960 from the wall socket.

Point the remote control handset at the second recorder, press one after the other the numbered buttons [8] [5] [1] [7], and then the button [OK].
The second recorder now will only react to the remote control commands when the second function level has been selected with the button [VIDEO 2].

Reconnect your VS 960 to the wall socket.

After this adaption, the following applies:

Button [VIDEO 2] not pressed (basic position, no indication): Remote control of your VS 960.
So that you can remotely control the second recorder, the indication 2 must be visible in the display of the remote control handset. If this is not the case, press the button [VIDEO 2].
Approximately 1 min. after the last entry, the remote control returns automatically to the basic position and the indication 2 disappears.

If you wish to undo the adaption of the second recorder of the models 600/700/800/900 series, select the function level 2 with the button [VIDEO 2] and press one after the other the numbered buttons [8] [5] [1] [6], and then the button [OK].

Remote control of video recorders of the models 400 and 500 series

For the remote control of the VS 960, you must block the function level 2. For this, press one after the other the numbered buttons [8] [5] [2] [7] and then the button [OK].
Your VS 960 now will only react to the remote control commands in the function level 1.

For the remote control of the second recorder of the models 400/500 series, you must change the command structure of the remote control handset.

Select the function level 2 by pressing the button [VIDEO 2] and keep this button pressed, until the indication C0162 appears in the display of the remote control handset.

Immediately after that, press the button [1].
The indication in the display of the remote control handset changes from C0162 to C0102.

After this adaption, the following applies:

Button [VIDEO 2] not pressed (basic position, no indication): Remote control of your VS 960.
So that you can remotely control the second video recorder, the indication 2 must be visible in the display of the remote control handset. If this is not the case, then press the button [VIDEO 2].
Approximately 1 min. after the last entry, the remote control handset returns automatically into the basic position and the indication 2 disappears.

If you wish to undo the adaption of the VS 960, then select the function level 1 with the button [VIDEO 2] and press one after the other the numbered buttons [8] [5] [2] [6], and then the button [OK].

To undo the adaption of the remote control handset, press and keep the button [VIDEO 2] until the indication C0102 appears in the display. Then press the button [1]. The indication changes into C0162.

8. Special Functions

Remote Control of TV Receivers

You can also remotely control TV receivers with the video remote control RP 85 LCD.

This is possible with TV receivers with the remote control TP 661 and later models.

Also with TV receivers operating with the remote control handsets TP 590, TP 600, TP 610, TP 630, TP 650 and TP 660.

> Which function actually can remotely be controlled depends of course on the technical features of your TV set.
>
> After the last entry, the remote control handset remains still approx. 1 min. in the TV mode, then it automatically returns into the video recorder mode.
> You can switch to recorder mode before this time has elapsed by pressing the button [VIDEO].

Preparations

Switch on the TV set with its mains button.

Press the button [TV].
In the display of the remote control handset appears: tv.

Point the remote control handset at the TV receiver.

TV sets operating with the remote control handsets TP 590, TP 600, TP 610, TP 630, TP 650 and TP 660

Programme selection

Select the programme positions 1 to 9 with the numbered buttons [1], [2] to [9].

Select the AV programme position with the numbered button [0].

Setting the volume

Press the button [◄] = volume down.

Press the button [►] = volume up.

You can recover the optimum (basic) volume setting by pressing the button [OK].

Standby

During television pauses, you can switch your TV set to standby with the button [⏻].

Switch the TV set on again with one of the numbered buttons [1], [2] to [9].

TV receivers operating with the remote control handset TP 661 and later models

Programme selection

Select the programme position 1 to 9 with the numbered buttons [1], [2] to [9].

For the 2-position programme positions 10 to 49, first enter the tens positions which then will flash for about 3 seconds. Enter the units position during this period of time.

With the buttons [▼] and [▲], you can select the programme positions step by step from 1 to 49.

The AV programme position is selected by pressing the button [AV/CV] once.
The CV programme position is selected by pressing the button [AV/CV] twice.

Setting the volume

Press the button [◄] = volume down.

Press the button [►] = volume up.

You can recover the optimum (basic) volume setting by pressing the button [OK].

Stereo broadcasts

If a broadcast is in stereo, the TV set automatically switches to stereo sound reproduction.
If the stereo sound quality is poor, you can switch to mono sound reproduction by pressing the button [1•].

Two-channel-sound broadcasts

When receiving two-channel-sound broadcasts, e.g., a film with the original sound on channel 2 and the dubbed version on sound channel 1, you can select between the two channels. For this, press the button [1•].

On the TV set appears the indication 1 (for sound channel 1) or 2 (for sound channel 2).

Standby

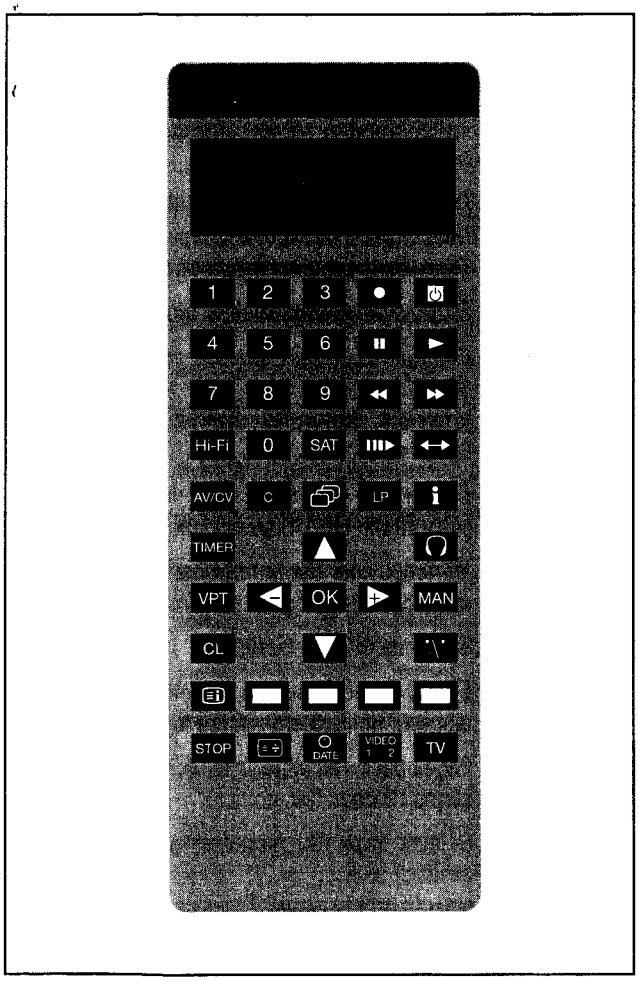
During television pauses, you can switch your TV set to standby with the button [⏻].

Switch the TV set on again with one of the numbered buttons [1], [2] or [9], [0], or the button [AV/CV], or the button [Hi-Fi].

9. Valuable Information

The Remote Control Handset at a Glance

On this and the following page, the buttons of the remote control handset are briefly explained. A detailed description of remote control can be found in the respective chapters of these operating instructions.



Display of the remote control handset.

[1]...[0] _ Numbered buttons for various entries.

[AV/CV] _____ Selects the programme positions AV and CV for recording and record programming.

[C] _____ For entering channels (when allocating TV stations to programme positions);
PAL/SECAM switch-over.

[Hi-Fi] _____ Selects the audio signal at the AUDIO sockets for recording and record programming.

[SAT] _____ Selects teh video/audio signal of a satellite receiver connected to the socket ⊖ EURO-AV ⊖ for recording and record programming.

[●] _____ Starts recording.

[⏻] _____ Terminates all functions (Stop/Standby);
switches off the remote control display.

[⏸] _____ Pause on recording,
freeze-frame on playback.

[▶] _____ Starts playback.

[◀◀] _____ Reverse picture search on playback,
fast rewind with Stop selected.

[▶▶] _____ Forward picture search,
fast forward wind with Stop selected.

[LP] _____ Switches to longplay mode and back to standard play mode.

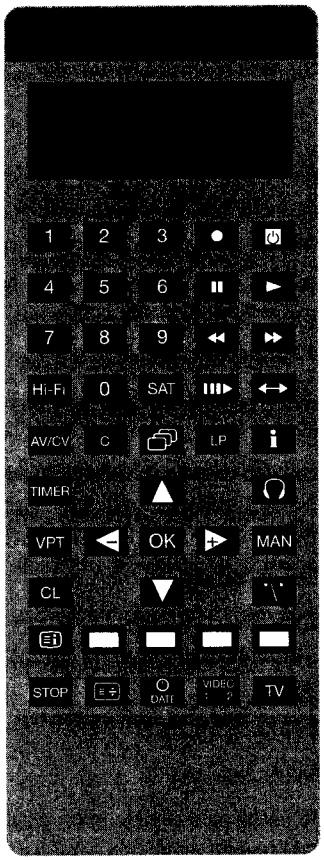
[↔] _____ Starts the Goto function after having entered the tape position (on playback);
starts the channel search (when allocating TV stations to programme positions);
activates the balance adjustment function.

[MAN] _____ Selects between automatic and manual sound level adjustment.

[🔊] _____ Selects the sound track on recording and playback;
switches over the code of the remote control handset;
switches on and off the TV sound in the on-screen dialogue mode.

[Ω] _____ Preselect button for adjusting the headphone volume.

9. Valuable Information The Remote Control Handset at a Glance



TIMER _____ Activates TIMER programming in the display of the remote control handset and confirms entries.

(yellow) _ Selects sub-topics (chapters) in Teletext mode;
preselect button for editing titles (archive system).

CL _____ Clears data;
reveals hidden information in Teletext mode, e.g., quiz answers, or moves in chess plays.

▲ ◀ ▶ ▼ __ Cursor buttons for moving the cursor and for selecting various functions.

For selecting programme positions (in Stop mode);
for adjusting the picture sharpness (on playback);
for adjusting the track position (on playback);
for adjusting the sound balance.

For fine tuning programmes;
for manually adjusting the sound level (on recording);
for adjusting the headphone sound volume.

OK _____ Confirms data;
transmits the TIMER data to the recorder;
switches from elapsed playing time indication to four-digit tape-length indication and vice versa.

i _____ Switches to the Info table and back to the TV picture.

▶ _____ Starts playback.

(blue) __ For selecting topics in Teletext mode;
for displaying additional information when using the archive system;
for confirming entries and storing these into the archive system.

VPT _____ For record programming with Text programming; displays the Teletext page stored in the TV stations table on the picture screen.

STOP _____ Stops subpages in Teletext mode.

_____ Enlarges the character size in Teletext mode and Text programming mode;
preselect button for adjusting the picture sharpness.

DATE _____ Confirms the clock time and the date;
calls up the clock time and the date.

VIDEO _____ Switches over the remote control handset for operation of a second video recorder.

▮▶ _____ Switches to slow motion.

_____ Confirms the entry of a cassette number;
displays the contents of the loaded cassette.

(red) ____ Pages back one page in Teletext mode;
skims through the archive.

_____ Selects page 100 (contents page) in Teletext mode;
selects programmed Timer positions.

(green) ___ Pages forward one page in Teletext mode;
skims through the archive;
for entering new subjects into the archive system.

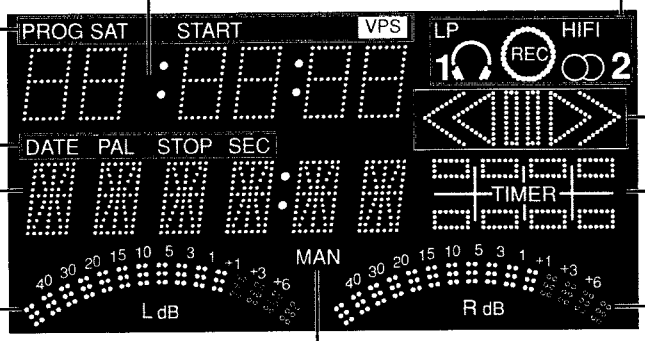
9. Valuable Information

The Multifunction Display of the Recorder

PROG	Programme
SAT	Satellite programme
START	Start time (Timer)
VPS	VPS identification
DATE	Date
PAL	PAL-norm
STOP	Stop time entry
SEC	SECAM-norm

Programme indication
Playing time indication
Tape-length indication
C = Channel
CA = Special channel
CASS = Insert cassette

LP	Longplay
1	Sound channel 1
🎧	Headphone sound volume
REC	Recording
HiFi	HiFi sound
∞	Stereo
2	Sound channel 2



Occupied Timer positions

Record level, LH

Manual record level adjustment

Record level, RH

Alphanumeric indications:

ARD	Station abbreviation
GOTO	Goto function
APF	Automatic Programme Finder
ATTS	Automatic Tape Time Select
INFO	On-screen dialogue
ARCHIV	Archive system
INSERT	Insert editing
INSDUB	Insert editing with dubbing
DUB	Dubbing
REST	Remaining playing time
FULL	Tape/Timer positions full
COLL	TIMER collision
LOCKED	Combination lock activated
CONT1	Continuous recording HF
CONT2	Continuous recording AV
CONT3	Continuous play
VIDEO1	Video level 1
VIDEO2	Video level 2
BAL	Sound balance
CRISP	Crispening
MIX	HiFi sound plus normal sound
NORMAL	Normalsound
JOG	Freeze-frame jogging
-SLOW+	Variable slow motion
CAMERA	Camera-pause in synchro-edit mode
SYN-ED	Synchro-edit mode

Drive mechanism functions:

≫	Fast rewind
⋘	Reverse picture search
◁▯▯	Reverse slow motion
◁	Reverse play
▯▯	Pause/Freeze-frame
▯▯▷	Slow motion
▷	Play
⋙	Forward picture search
≪	Fast forward wind

9. Valuable Information Clearing Faults Yourself

Not every picture and sound fault must have the cause in a defect of your recorder.

For example, the cause of the fault might also be an accidentally pulled out connecting cable, a failure of the transmitter, or a failure in your TV aerial system.

Fault	Cause	Remedy
No clock time indication on the recorder/ the cassette is not pulled in.	Pulled out mains plug or bad contact.	Insert mains plug or use another wall socket.
The recorder cannot be operated; mains voltage supply is O.K.	The electronic combination lock is activated (indication LOCKED)	Deactivate the lock.
Recording of TV programmes not possible (only snow on the picture screen).	Aerial cable not connected.	Connect aerial cable.
	Programme to be recorded not tuned to on the recorder.	Tune to programme.
	Failure of TV transmitter or of your aerial system.	Check by selecting the programme to be recorded on the TV set or ask your neighbour whether he can receive this programme.
Recording not possible	Cassette protected against new recording.	Cover the hole in the cassette with sticky tape.
A programmed Timer recording has not been executed.	Timer badly programmed.	
	Wrong entry of VPS time on VPS controlled recordings.	
	Table »Record Programming« still activated.	
	Failure to press a longer time the button ⏻ after having interrupted the record standby mode (Timer position flashes).	
Bad quality of the reproduced picture.	TV set not correctly tuned to the transmitting channel of the recorder.	Tune the TV set correctly to the transmitting channel of the recorder.
	The video heads are soiled.	Let the video heads be cleaned by a specialist.
	The video heads are worn.	Let the head drum be replaced by a specialist.
Operation with the remote control handset not possible.	The batteries of the remote control handset are exhausted.	Fit new batteries.
	The remote control handset is not pointed at the recorder.	Point the remote control handset at the recorder.
	Wrong function level adjusted on the remote control handset.	Switch the function level of the remote control handset to VIDEO 1.

Fault	Cause	Remedy
Despite programming with archiving, the recording is not accepted by the archive.	No cassette number has been entered.	Enter the cassette number.
	The recorder does not know the total playing time of the cassette.	Enter the total playing time of the cassette.
Despite correct entries, the title is not accepted by the archive.	The memory of the archive is full.	Let extend the memory (consult your dealer).
The name of a subject cannot be changed.	There is already at least one title allocated to the subject.	

When Repair of the Recorder is Necessary

If the above suggestions for clearing the faults stated in the table bring no result, or if the video recorder shows a different fault, then take it to an authorized GRUNDIG dealer.
To ensure that the entries you made into the archive system remain conserved in such a case, please enter your name and address instead of record titles into the last archive positions (see 7. Archive System, chapter "Manual Re-archiving", page 65, point 3 to page 68, point 12).

9. Important Notes/Specification

Specification

This video recorder complies with the VDE 0860 safety regulations and consequently also with the international safety specifications IEC 65 and CEE 1.

Under no circumstances should you open the video recorder yourself.

The manufacturer accepts no responsibility for damage which occurs under such cirumstances.

TV norm:	CCIR, PAL B/G/H, 625 lines CCIR, SECAM B/G, 625 lines *
System:	VHS
Mains voltage:	180 ... 240 V~, ± 10 %, 50 Hz
Weight:	approx. 5.7 kg
Power consumption	
– on recording:	approx. 29 W
– in EE mode:	25 W
– modulator off:	13 W
Operation position:	horizontal
Ambient temperature:	+ 5 °C to + 40 °C
Relative humidity:	up to 80 %
Fast wind time forward/reverse:	max. 5 minutes with E 180 cassette
Audio bandwidth:	a) 20 Hz - 20 kHz to DIN 45 500 with hifi sound recordings. b) 40 Hz - 10 kHz to DIN 45 511 with mono sound recordings.
Dynamic range:	approx. 90 dB (with hifi sound)
Wow and flutter:	≦ 0.015 % (typ. DIN, with hifi sound ≦ 0.005 % (typ. WRMS, with hifi sound)
Distortion factor:	< 0.3 % (with hifi sound)
Audio sockets:	
R ⊖ L	2 Cinch
R ⊕ L	2 Cinch
Universal socket: (non-standard)	9-pole
Euro-AV socket: (DIN/EN 50 049)	21-pole
Aerial input socket: (DIN 45 325)	coaxial **B**, input 75 Ω
Aerial output socket: (DIN 45 325)	coaxial **S**, output 75 Ω
Headphone socket:	3.5 mm ø Jack
Headphone impedance:	8 Ω - 2 kΩ
Microphone socket:	3.5 mm ø
Microphone level:	⩾ 2 mV
RC socket:	3.5 mm ø
Video socket: VIDEO IN	Cinch
Audio sockets: Audio IN	Cinch

The complete accessories programme available for your video recorder is shown in the GRUNDIG catalogue which you can obtain from your specialized dealer.

E. and O.E.
Subject to alteration